

Determining an alternative leadership paradigm in a selected volatile environment

by

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Declaration of adherence

I, the undersigned, hereby declare that

1. The content of this document is my own work.
2. I adhered to the ethical obligations and principles of research ethics, as prescribed by the faculty's guidelines for ethics in research, during all phases of the research process.
3. "Determining an alternative leadership paradigm in a selected volatile environment" is my own work and all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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List of Abbreviations

AMG	Airline Manager Group
ASK	Available seat kilometre
ATA	Air Travel Association
ca.	circa
CAB	Civil Aeronautics Board
EQ	Emotional intelligence
GDP	Gross Domestic Product
IATA	International Air Transport Association
km/h	Kilometres per hour
n.d.	No date
PLF	Passenger Load Factor
QLM	Quantum Leadership Matrix
QLS	Quantum Leadership Survey
R	Respondent
ROIC	Returns of invested capital
S	Statement
SARS	Severe Acute Respiratory Syndrome
SQ	Spiritual Quotient
TQM	Total Quality Management
USA	United States of America
WACC	Weighted average cost of capital

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Executive Summary

Abstract: Most industries are confronted with increasingly volatile environments that consist of rapid change and unpredictable dynamics. These factors require a particular leadership style that is capable of dealing with complexity. The suggested alternative leadership paradigm is based on the ideas of quantum mechanics, complexity theory and relativity theory; thus referred to as Einsteinian-Quantum leadership paradigm. To establish whether such leadership paradigm is emerging in volatile environments, semi-structured interviews and multiple surveys were distributed to managers and leaders in the international airline industry. Based on the results, a Quantum Leadership Matrix (QLM) was established to test for the level of quantum leadership behaviour in the selected industry and assist in identifying gaps between Newtonian-Cartesian and Einsteinian-Quantum characteristics in order to develop sustainable leadership models. The QLM and surveys indicated that managers and leaders still resist in a transition phase where both Newtonian-Cartesian and Einsteinian-Quantum leadership characteristics can be observed simultaneously.

Keywords: leadership paradigm; quantum leadership; complexity; volatile environment; uncertainty; airline industry

Chapter 1: Introduction

1.1 Introduction

“The speed of light does not merely transform the world. It becomes the world. Globalization is the speed of light.” (Paul Virilio, 2000)

Most multinational organisations in the modern business environment are faced with the emerging phenomena of globalisation and its comprising elements (Ehlers & Lazenby, 2010). Besides the positive effects of a fused world where distances become smaller and communication faster, many companies are dealing with everyday challenges of a globalised world and managing its complexities (Hall, 2008; Ehlers & Lazenby, 2010). The downside of melting economies includes, for example, uncertain political policies, fluid market dynamics, currency fluctuations, energy cost increases, inflation or recession (Hall, 2008). These factors add complexities to the management of an organisation; thus leading to unpredictable change and continued uncertainty levels (Haas, 1993; Hall, 2008; Zohar & Wray, 2015). In other words, most industries are confronted with rather volatile environments that require special attention and therefore a particular leadership style that is capable of dealing with complexity.

As most existing leadership paradigms are still based on a Newtonian-Cartesian worldview, it has been suggested and populated for some time now, that the old forms of leadership with their rigid organisational structures do not fulfil their purpose any more. This implies that within inter-related markets, global partnerships and diverse cultures a new form of knowledge based worker and leadership emerges (Ray & Rinzler, 1993; Wheatley, 2006; Hall, 2008; Denning, 2011). It is evident that this form of leadership paradigm is moving away from the linear, cause-and-effect approach that has shaped leadership thinking towards a more holistic, systems thinking view. Managers and leaders tend to apply more and more alternative techniques and tools (e.g. TQM, 6-sigma, Lean Methodology) in order to successfully manage the organisation and cope with the increasing complexities of volatile environments (Hall, 2008; Axson, 2009).

Although there does not exist one best leadership paradigm, the evolving ideas of system thinking, the learning organisation or transformational and situational leadership all combine into an approach that is clearly different from the currently applied leadership theories.

Business students, as well as academics and leadership experts, reside in a state of transition where new ideas and theories integrating a quantum worldview have been formulated but cannot be explored in many organisations (Kotter & Heskett, 1992; Denning, 2011). According to Kotter and Heskett (1992, in Barrett 2010, p.6), 'After conducting fourteen formal studies and more than a thousand interviews, directly observing dozens of executives in action, and compiling innumerable surveys, we [Heskett and Kotter] are completely convinced that most organisations today lack the leadership they need.' In other words, Kotter and Heskett are of the opinion that our current leadership paradigms, organisational models and management structures are insufficient to cope with the complex challenges caused by a volatile environment as they fail to deal with all aspects thereof so that uncertainty prevails and chaos emerges. Therefore, the analysis of this research is based on the assumption that volatile environments trigger the demand for a completely new form of leadership paradigm that goes beyond the characteristics of modern leadership ideologies and aims to cope with all aspects of a complex environment. This will be referred to as the quantum leadership paradigm as this new world-view aims to accept the unpredictability of things and seeks to find new order in a world of chaos by taking on a holistic approach to problem-solving (Pickup, 2000; Wheatley, 2006; Zohar & Wray, 2015).

1.2 The International Airline Industry

*"It is a well-established fact that the airline industry suffers from insufficient profitability."
Oliver Wojahn (2012, p.1)*

The international airline industry is selected as compelling case to put the research in the context of a volatile and complex environment. Although the airline industry is expected to continue to grow in the medium- to long-term due to the rising demand in air travel, the overall profitability has been very volatile (Karp, 2012; Wojahn, 2012). Several factors influencing the attractiveness of the industry have led to low profit margins, strong competition and a high bargaining power on both ends - buyers and suppliers (Lockan, 2013). The main reasons for the high level of volatility are manifold.

For instance, macro-economic factors such as deregulation, economic developments in world GDP growth, government intervention and political regulations, as well as the sensitivity to rising oil prices, represent a risk to the overall profitability. Additionally, political unrest in certain areas of the world (e.g. North Africa), natural catastrophes (like Tsunamis or ash clouds), and terrorist attacks (9/11) further contribute to the high volatility of the airline industry (Axson, 2009; Peterson, 2010; Scovel, 2012; Lockan, 2013).

Due to the above-mentioned factors as well as increasing competition in the market,

Peterson (2010) suggests that the airline industry can be used as a compelling case for volatile environments as many characteristics are represented and companies within this industry are facing tremendous pressure to cope with the changing conditions.

In the table below, the major airline types operating in the industry and their corresponding characteristics are outlined as a reference for this study.

Table 1.1. Airline types and corresponding characteristics

Type of Airline	Characteristics	Examples
Legacy Carrier $N_1 = 8$ % Legacy = $8/29$ = 28%	High number of interstate routes High level of services (first class/business; lounges, in-flight entertainment) Merger with other carriers to build alliances Extensive fleet Heavily unionised Peak schedules at major hubs	Lufthansa, British Airways, United Airlines, South African Airways, Delta Airlines, American Airlines, Qantas, Austrian Airlines,
Low Cost Carrier $N_2 = 10$ % Low Cost = $10/29$ = 34%	Post-deregulation start-up carriers with less unions Fleet simplicity Lack of expensive defined pension plans Less employee friendly work rules Cost advantage due to lower service levels Targets destinations that are less frequently subjected De-peaked schedules at major airports that allow faster turn-around-times	GermanWings, EasyJet, Air Asia, Kulula, Southwest Airlines, Air One, Jet America, Spirit Airlines, Air Berlin, Ryan Air
Middle Eastern Carriers $N_3 = 11$ % Middle East = $11/29 = 38\%$	Strong fleet High number of hub destinations Fast expanding networks New flights to regions with strong growth potential (e.g. Asia and South America) High service quality Strong cash reserves provided by major players in the Gulf region	Emirates Airline, Qatar Airways, Etihad Airways, Singapore Airlines, Turkish Airlines, Air Arabia, Jazeera, Oman Air, Saudi Arabian Airlines, Air Arabia, Royal Jordanian
Total: N = 29		

Source: Zhu, 2009; Business Management Magazine Online, 2013

1.3 The Research Problem and Statement

“Leaders must encourage their organisations to dance to forms of music yet to be heard.”

(Warren Bennis, 2010)

The prevailing leadership theories of the last centuries are based on a Newtonian-Cartesian worldview in which relationships are built on cause-and-effect and organisations operate along a linear, bureaucratic and hierarchical order (McMillan & Carlisle, 2003; Hall, 2008). Everything is broken into parts that fulfil clear and simple functions (e.g. departments in an organisation) and aim at efficiency, regularity and predictability. Supply chains, organisational structures and cultures have been developed according to this set of rules where responsibilities are separated into functions and people operate according to roles (Pellissier, 2004; Hall, 2008). Natural emotions such as intuition, insights and creativity are rather rejected as invalid sources for decision making and rational data, hierarchical orders and mechanist clockwork take their place. Therefore, this paradigm leaves out important business traits including entrepreneurial spirit, creativity and inner self-consciousness to lead the organisation through complex internal and external challenges (Ray & Rinzler, 1993; Osterberg, 1993; Zohar & Wray, 2015).

This belief system, however, has been challenged with the introduction of a new worldview in the 1960s. Scientists of all fields and levels (including Einsteins' quantum theory and Kuhn's paradigm shift) established that nature does not work along predictable lines but is rather complex and difficult to control (Kuhn, 1962; Pellissier, 2004; Wheatley, 2006; Denning, 2011). This different way of thinking recognises that changes in one area ultimately affect other areas and that nature and organisations are not self-contained but heavily responding to factors in the external environment (Robbins, De Cenzo & Coulter, 2013).

As a result, in the natural sciences, researchers have taken the topic further by trying to apply and match the scientific results to organisations assuming that the revelations in nature also fit the social business environment which is characterised by continuous change and unpredictability (Wheatley, 2006; Hall, 2008; Olmedo, 2012). However, there is little evidence so far that the integration of natural sciences and social sciences will be a success as empirical studies are difficult to obtain and the concept of a transitional leadership paradigm is fairly new (Kotter & Heskett, 1992; Hall, 2008). Thus, further investigation is required to analyse and test the quantum-based worldview in an organisational context.

Since a fundamental shift in scientific thinking is currently under way (from a Newtonian-based worldview to a Quantum science-based worldview) a similar shift in leadership

paradigms and organisational models becomes imaginable. According to Kuhn (1962) and Denning (2011), the revelations in science have led to a paradigm shift in business where a new mental model of the world helps to explain the anomalies of the prevailing management concepts. While the existing paradigms focus on linearity and replaceable roles and responsibilities, a shift in paradigm suggests a completely new way of thinking about leadership roles and underlying value and support systems. Ray and Rinzler (1993, p.5) believe that, 'The fundamental assumption of the new paradigm is that our inner knowledge directs the way the world is going to look [...]. We are beginning to realize that if we don't believe in something, it doesn't exist.' Therefore, it is assumed that this change of worldview and shift in behaviour ultimately leads to the conclusion that the current leadership paradigm must change too and develop fundamentally different leadership characteristics (e.g. inner knowledge, intuition, compassion, and spirit) in order to prosper in a period of constant and discontinuous change (Ray & Rinzler, 1993; Zohar & Marshall, 1999; Zohar & Marshall, 2004; Zohar & Wray, 2015). Although there is no clear definition of what this leadership paradigm should be comprised of, it is suggested that there is a need to acknowledge that there is no static Newtonian ideal of the world and that individuals, businesses and leaders need to consider changing their fundamental beliefs and assumptions in order to successfully operate within the emerging climate of international markets, diverse cultures and unique social and political environments (Haas, 1993; Pellissier, 2004; Wheatley, 2006; Hall, 2008; Olmedo, 2012).

Therefore, the research statement that informs this research is as follows:

The prevailing leadership theories based on a Newtonian-Cartesian believe system are not sufficient in leading in a complex environment. Thus, a paradigm shift towards an Einsteinian-Quantum believe system is suggested in order for businesses and leadership to sustain in a volatile environment.

This leads to the following questions:

- What leadership paradigms exist today and what are their characteristics?
- To what extent do these models fulfil the business and stakeholder requirements?
- To what extent do the pre-supposed value systems and leadership characteristics contribute to the success of the organisational model in a volatile environment?
- To what extent is the behaviour of the prevailing leadership models linked to the external challenges of the environment?

By answering these questions, a gap analysis can be developed in order to highlight possible differences between Newtonian and Quantum Leadership models as a base to determine if a new leadership paradigm is evolving in a volatile environment which is contrary to a Newtonian-Cartesian model.

1.3.1 Research Purpose and Significance of the study

The purpose of the research is to develop a “leadership matrix” for the selected volatile industry that entails the leadership characteristics present in that particular environment and compare the findings to the characteristics of a quantum leadership paradigm. As an outcome of the research, a conclusion can be drawn whether quantum leadership characteristics are especially successful in managing a volatile environment, and thus a “new” form of leadership is emerging. If the research outcome supports this hypothesis, it is suggested that a paradigm shift in leadership thinking and behaviour has to occur in order to successfully sustain in a complex environment. Therefore, the research is especially significant for leaders in volatile industries facing constant change and unpredictable situations.

1.3.2 Research Objectives

1.3.2.1 Primary Objective

The primary objective of the research is to explore the evolution and existence of a new form of leadership paradigm, different from the Newtonian leadership paradigm, triggered by the emergence of increasingly volatile environments as described in section 1.1.

1.3.2.2 Secondary Objectives

Based on the primary objective, the research seeks to achieve the following empirical research objectives:

- To determine the characteristics of a Newtonian-Cartesian leadership style.
The evolution of management theories and paradigms since the beginning of the 19th century will be analysed and evaluated to establish key characteristics of a Newtonian-Cartesian leadership style.
- To determine the characteristics of an Einsteinian-Quantum leadership style.
The ideal features of the future quantum organisation and quantum leadership style will be identified and listed.
- To determine the features of a volatile environment in the 21st century.

A situational analysis of the international airline industry will be conducted by applying Porter's Five Forces analysis.

- To establish the link between successful leadership styles within a volatile industry and a quantum world-view.

The status quo of leadership behaviour in the international airline industry will be analysed and evaluated in order to establish the extent to which a new form of leadership paradigm is emerging triggered by a volatile environment.

1.4 Research Constructs

The identified research constructs for this research are a volatile environment, leadership paradigm, and more specifically, the alternative quantum leadership paradigm. These are defined in Table 1.2. below:

Table 1.2. Research constructs

Construct	Definition	Authors
Volatile Industry	A particular form or branch of economic or commercial activity that is liable to change rapidly and unpredictably, especially for the worse.	Bromley, 2006
Leadership Paradigm	Leadership paradigms are mind-sets, constructs or mental models that create views which drive leadership behaviours, and eventually impact organisational outputs.	Flumerfelt & Banachowski, 2011
Quantum Leadership Paradigm	Quantum leadership implies that the world is not predictable but rather probable; that things cannot be separated from the whole but have to be observed holistically; and that chaos creates a new level of order rather than destabilisation.	Pickup, 2000 Pellissier, 2004 Zohar, 2004 Hall, 2008

In the following section, leadership definitions will be explored to augment the above construct on leadership.

1.4.1 Definition of Leadership

“Leadership is like beauty; it's hard to define, but you know it when you see it.”

Warren Bennis (1994, p.-xxx- (foreword))

Literature provides a multitude of definitions on “leadership” that all focus on different aspects and characteristics of the term and usually reflect the originator's own leadership values. Needless to say that leaders, academics, and experts do not agree on one best definition and keep searching for a common understanding (Schein, 2004; Fenwick & Gayle, 2008). The table below depicts only a few examples describing the definition of leadership.

Table 1.3. Selected definitions of leadership

Definition	Author
<i>“The only definition of a leader is someone who has followers Some people are thinkers. Some are prophets. Both roles are important and badly needed. But without followers, there can be no leaders.”</i>	Drucker, 1992, p.xii (foreword)
<i>“Leadership is influence - nothing more, nothing less.”</i>	Maxwell, 2007, p.1
<i>“Leadership is a function of knowing yourself, having a vision that is well communicated, building trust among colleagues, and taking effective action to realise your own leadership potential.”</i>	Bennis, 1994, p.166
<i>“Leadership is a process of social influence in which one person can enlist the aid and support of others in the accomplishment of a common task.”</i>	Chemers, 1997, p.1
<i>“Leadership is discovering the company’s destiny and having the courage to follow it. Leadership is a journey toward wholeness. A leader's journey starts by looking inward to understand, Why am I here? What is it that I’m here to do?”</i>	Jaworski, 1996 in an interview with Alan M. Webber which appeared in the June/July issue of the Fast Company magazine
<i>“...leadership is a complex phenomenon that touches on many other important organizational, social and personal processes. It depends on a process of influence, whereby people are inspired to work towards group goals, not through coercion, but through personal motivation.”</i>	Bolden, 2004, p.5

For the purpose of this research, leadership as a construct is investigated rather than a leader, the latter which resides in one person.

Considering the above statements, leadership focuses on two distinct parts:

1. The social component whereby self-awareness and building trust play a crucial role.
2. The ability to empower people and provide vision in order to achieve a common goal.

Thus, the working leadership definition for this research would read as follows:

“Leadership is a process of exercising social influence on followers in order to reach a common vision and realizing goals by utilizing the full potential of

individual and combined competencies.”

Furthermore, the research will mainly focus on leadership as a construct instead of considering the leader as an individual.

1.4.2 Newtonian-Cartesian paradigm

The “old paradigm” (formulated on the ideas of Bacon (1620), Descartes (1637) and Newton (1687) provides a rational view of the world in which relationships are based on cause and effect and where its originators believe that the dynamics of any complex system can be wholly understood by reducing the physical world into its most basic parts that operate in a simple, linear way. Regarding the world as a well-oiled machine in which the universe is completely knowable and predictable, the Newtonian-Cartesian paradigm focuses on stability as fundamental goal and any deviation from the equilibrium is regarded as failure (Capra, Steindl-Rast & Matus, 1992; Howe, 1994; Pellissier, 2004). In a business context, the old paradigm implies that the various parts within an organisation should strive for order and stability to avoid destabilisation of the existing state and remain predictable, logic and regular at all times. In leadership this is mainly achieved by a top-down approach where leaders exercise a control and command function and operate in bureaucratic and hierarchical structures with a focus on predictability and efficiency (Pellissier, 2004; Wheatley, 2006).

1.4.3 Einsteinian-Quantum paradigm

The “new paradigm” (based on Einstein's and Planck's discovery of quantum physics) is built on a combination of various scientific concepts including relativity theory, quantum mechanics and chaos theory. These imply, in contrary to the Newtonian-Cartesian paradigm, that the world is not predictable but rather probable; that things cannot be separated from the whole but have to be observed holistically; and that chaos creates a new level of order rather than destabilisation (Pickup, 2000; Pellissier, 2004; Zohar & Marshall, 2004; Hall, 2008). By accepting these statements as mere facts, the understanding of the world is changing dramatically and presenting an alternative to the Newtonian-Cartesian paradigm. According to Pickup (2000), the new paradigm implies that leaders and managers in a business environment need to change their way of thinking and learn to consider many possible interpretations for problem solving instead of identifying one as the ultimate and best truth. Analysing past and present events does not assist in predicting future outcomes and individual parts (e.g. individuals, organisational departments, etc.) cannot solve

problems holistically.

1.5 Delimitation of the study

The research into a volatile environment is delimited to the international airline industry as it entails the characteristics of a volatile environment (e.g. dependencies on macro-economic developments, consumer trends and environmental incidents) and offers a number of secondary information such as industry reports and aviation statistics in order to establish core features of that particular environment.

The research focuses on the current situation in the airline industry and does not take into consideration historical developments or trends throughout a specific period of time. All findings will be based on a situational analysis of the industry. Therefore, the research is cross-sectional by nature.

Lastly, the research is solely exploring different leadership traits existing in that industry – i.e. excluding all other influencing factors determining the successfulness of that industry.

1.6 Research Design

1.6.1 Research Approach

As this research is focused on understanding organisational leadership behaviour within the context of a volatile environment (i.e. the airline industry) and establishing key aspects of a volatile environment, the research design will be complex by applying a multi-disciplinary and multi-level approach.

Since the research is inspired by the ideas of quantum physics and uses it as metaphor in exploring quantum-specific leadership characteristics, the research design takes a similar holistic approach and combines various research theories and methodologies to achieve and satisfy a holistic outcome. Therefore different theories, methodologies and frameworks will be synthesised to provide triangulation and enhance the overall research quality.

To address the research objectives in more detail and determine whether a paradigm shift towards a more holistic, quantum-based leadership paradigm is triggered by volatile environments, a mixed-methods approach is inevitable. In order to meet the research objectives and establish the various characteristics of Newtonian and Quantum leadership traits, as well as features of a volatile environment, a triangulated mixed-methods research

approach will be applied where existing information is described, evaluated and outlined in a comparative manner based on the information rich qualitative data. This is augmented by quantitative data with regards to the gap analysis between Newtonian and Quantum leadership characteristics and highlight the differences between the two worldviews in terms of leadership styles. The research will use the empirical findings to draw conclusions regarding identified gaps and to establish links between sustainable leadership styles within a volatile industry and a quantum worldview.

With that, the research process is split into two different phases using a triangulated mixed methods design. The quantitative deductive approach will establish the various features of differing leadership paradigms and the qualitative inductive phase will interpret relationships and gather information rich descriptions applying an exploratory research style. Both methods will be combined in a triangulated research analysis to draw holistic conclusions and formulate informed suggestions with regards to the primary and secondary research objectives.

1.6.2 Research Methodology

The methodologies applied throughout the research consist of a mixture of qualitative and quantitative research techniques following a mixed methods triangulation design. Mixed methods research recognises the fact that the world is not exclusively quantitative or qualitative, that it is not an either/or world, and that research problems can be investigated with both numeric and narrative approaches and data in a single study (Creswell, 2003). By combining different research approaches in the investigation of one phenomenon, the accuracy and validity of the research results can be enhanced and findings can be triangulated from multiple sources and methods. Thus, a mixed research method is able to overcome the weaknesses and biases of single approaches and assist in investigating a phenomenon more thoroughly (Jick, 1979; Bryman, 2001).

1.6.2.1 Quantitative Research

In a quantitative research approach, the focus lies on the measurement of objective and statistically valid information that is usually gathered from a relatively large sample size or can be found in the form of already existing numerical data. Quantitative research seeks explanatory laws by establishing relationships and focusing on value-free and unbiased facts (Anderson, 2006). According to Cohen and Manion (1980), quantitative research is defined as social research that employs empirical methods and empirical statements. Typical measurement instruments for a quantitative approach include survey and correlation

research, hypothesis testing, and structured interviews (Tustin, Lighthelm, Martins & Van Wyk, 2005).

For the quantitative research phase in this study, a survey in terms of a structured questionnaire will be employed in order to establish and explain information. Additionally, extensive literature reviews about the airline industry, analysis of scientific findings and data evaluation will provide further insights into the topic. With the quantitative research approach, it is intended to answer the research questions in terms of leadership characteristics and the features of a volatile environment. Therefore, the quantitative research phase is further divided into two distinct parts to fit with the secondary research objectives. Part 1 establishes the various leadership traits of a Newtonian-Cartesian leadership style and the characteristics of a Quantum leadership style. Part 2 focuses on the identification of characteristics of the selected volatile environment of the 21st century.

1.6.2.2 Qualitative Research

Compared to the quantitative research method, qualitative research is more subjective in nature and focuses on the collection, analysis, and interpretation of data by observing people in their natural environment and drawing conclusions according to the meanings, concepts, definitions, characteristics, symbols, and descriptions of things. The nature of the research is exploratory and open-ended and information has to be obtained through mainly individual, in-depth interviews and focus groups (Anderson, 2006).

For the qualitative research phase of this study, conducting interviews with key players within a volatile environment will be deployed to gather new information regarding the existing leadership behaviour in volatile environments and establish the status quo for the international airline industry.

The interpretation and evaluation of information gathered from the above-mentioned research methodologies will lead to a subjective conclusion in terms of the evolution of a new leadership paradigm in relation to a volatile environment.

1.6.3 Research samples in the mixed methods design

The setting for the research is the international airline industry as a compelling case of a volatile environment. In order to achieve a high variability of information among the heterogeneous airline groups, the population for the study is comprised of a mixture of legacy carriers (such as Lufthansa, British Airways), low-cost carriers (like EasyJet, GermanWings) and newly emerging Eastern carriers (like Emirates, Turkish Airlines).

Therefore, the airline population can be stratified into homogeneous subgroups (see Table 1.4). Due to the highly qualitative nature of this part of the research, non-probability sampling techniques are most appropriate and exercised during the study as follows.

For the qualitative data collection, the sample will be drawn from Table 1.1. The legacy carriers particularly, exhibit the characteristics of a volatile and complex environment (e.g. high number of interstate routes, high level of services, mergers and alliances, extensive fleets and heavy unionisation). Therefore, the qualitative data will be collected from a purposive sample of leadership, i.e. leaders and managers at three levels of management (senior/executive/ middle and lower level management) from an airline in this category.

In the quantitative data collection phase, the LinkedIn Airline Manager Group (AMG) is selected as the research population due to the fact that this group provides a large base of dedicated management and leadership individuals in the airline industry. The AMG consists of three levels of management: Senior or executive management, middle management and lower (or entry level) management. Members will be invited to participate in the online survey using a convenience sample as it is the best method to obtain information from such a diverse group of experts about the international airline industry.

1.7 Research Quality

The purpose of this research is to discover and interpret knowledge about the emergence of a “new” form of leadership triggered by the characteristics of a volatile environment and investigate a link between successful leadership traits and a quantum world-view.

In general, research should be socially beneficial and sincere by trying to determine an overall truth based on available information, facts and figures. The research quality is enhanced if the content provided remains objective and empowers the reader to draw own conclusions, considers various perspectives, presents evidence and provides adequate references including original sources, and criticism. Any judgement has to be honest and needs to acknowledge possible errors, limitations or contradictory evidence. Before drawing a conclusion, all factors have to be evaluated carefully and the line of decision-making has to be explained in detail (Litman, 2012).

In order to achieve a high research quality, the above mentioned factors will be taken into consideration throughout the study and all given information will be analysed and evaluated carefully and viewed from various angles in order to remain objective and provide a great

variety of aspects. Data will be referenced according to the Harvard referencing style and interview outcomes will be displayed openly and in an ethical manner. Possible limitations (e.g. section 1.5) will be acknowledged and taken into consideration for the subjective conclusion at the end of the research. The research also acknowledges the ethical obligations in presenting true interview and survey information and protecting the identities of the candidates partaking.

Furthermore, the nature of qualitative research, unlike quantitative research, is to seek an understanding and producing findings from a real-world setting where the phenomenon of interest unfolds naturally and outcomes are rather difficult to determine and predict. Therefore, the concepts of reliability and validity, that usually reflect the consistent and truthful presentation and evaluation of statistical data, have to be adjusted for the purpose of the qualitative phase of the research (Golafshani, 2003). According to Golafshani (2003, p. 601), 'reliability is a concept to evaluate quality in quantitative study with a "purpose of explaining" while quality concept in qualitative study has the purpose of "generating understanding"'. Therefore, this study seeks to be consistent in the presentation of information in such way, that the reader is able to easily follow the argumentation and generate a general understanding of the research problem. The term validity in qualitative research should be replaced by trustworthiness, which is defensible and establishing confidence in the findings (Golafshani, 2003). All information presented in the study will therefore be truthful, accurate and objective in order to establish a neutral viewpoint and critically reflect findings and statements from various angles. The truthful presentation of information as well as the avoidance of error and misleading knowledge, ties in with the concept of research ethics (Resnik, 2011). Guidelines for authorship, data sharing, copyrights, and confidentiality rules will be adhered to at all times throughout the study and thus guarantee the researcher's accountability to the public.

All ethical considerations in this research will be aligned with the Belmont Report (1979) and its three main principles and applications including respect for persons, beneficence, and justice. Accordingly, all individuals participating in this research will be treated as autonomous agents whose privacy will be protected and who have the opportunity to choose whether to become a voluntary part in both the interviews and the survey. Furthermore, individuals will not be harmed at any time and risks in participating in the research are non-existent. Lastly, participants will not be exploited and the selection of candidates is fair.

Therefore, research in this dissertation is aligned with the research principles outlined in the

Belmont Report and follows the recommended code of conduct throughout the qualitative and quantitative research methods.

1.8 Data collection instruments

For the qualitative data collection, a semi-structured interview will be designed and conducted with selected individuals in the airline industry. The purpose of the interview is to gain a deeper understanding and knowledge about individual thoughts, feelings, meanings, behaviours, and interpretations regarding a specifically chosen research topic (Woods, 2011). The semi-structured qualitative interview is the most commonly used qualitative self-report method and is usually based on open-ended questions that are loosely structured and aim to get an in-depth account of the topic. Due to the pre-planning of semi-structured interviews, they are easy to replicate and increase the data reliability since at least some questions are standardized and can be compared and analysed among respondents (Barker, Pistrang and Elliott, 2005; Woods, 2011). For the purpose of this study, the aim is to conduct seven interviews among managers and leaders of legacy carriers and analyse and augment the findings from the quantitative survey results. If data saturation is not reached at this point, more interviews will be conducted.

To add quantitative data to the observations and semi-structured interviews, a Quantum Leadership Survey (QLS) in the form of a questionnaire will be derived and administered across selected key players of the chosen industry to further validate the research outcome. The questionnaire consists of a mix of open-ended and closed-ended questions and covers the same topics as outlined in the interview. Its purpose is to substantiate the interview findings and draw conclusions on a more general level across the aviation industry. For that purpose, the in-depth findings from the interview respondents are compared with the survey results to obtain a more cohesive view of the research topic and objectives.

1.9 Structure of the dissertation

The research process is split into two distinct phases. Phase 1 has a descriptive theory approach to establish key features of Newtonian-Cartesian and Quantum leadership traits as well as the characteristics of a volatile environment. A gap analysis will be undertaken in order to show the differences between the leadership styles and leadership characteristics of a Newtonian-Cartesian and Einsteinian-Quantum organisation. Phase 2 has a normative theory approach to quantifying and qualifying the suggestion that a new form of leadership is emerging in a volatile environment.

1.9.1 Phase 1: Descriptive theory

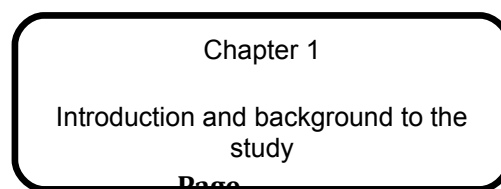
This phase covers the literature review chapters (Chapters 2 and 3) where scientific and objective information will be categorised and consolidated into a gap analysis of the different leadership styles and qualitative assumptions are being made with the help of content analysis. Through observing, classifying and defining relationships between leadership characteristics, a link between successful leadership traits and volatile environments can be drawn. The aim of the descriptive theory phase is to understand, define and suggest ideas to the interdependency of leadership characteristics and the sustainability of organisations in volatile environments.

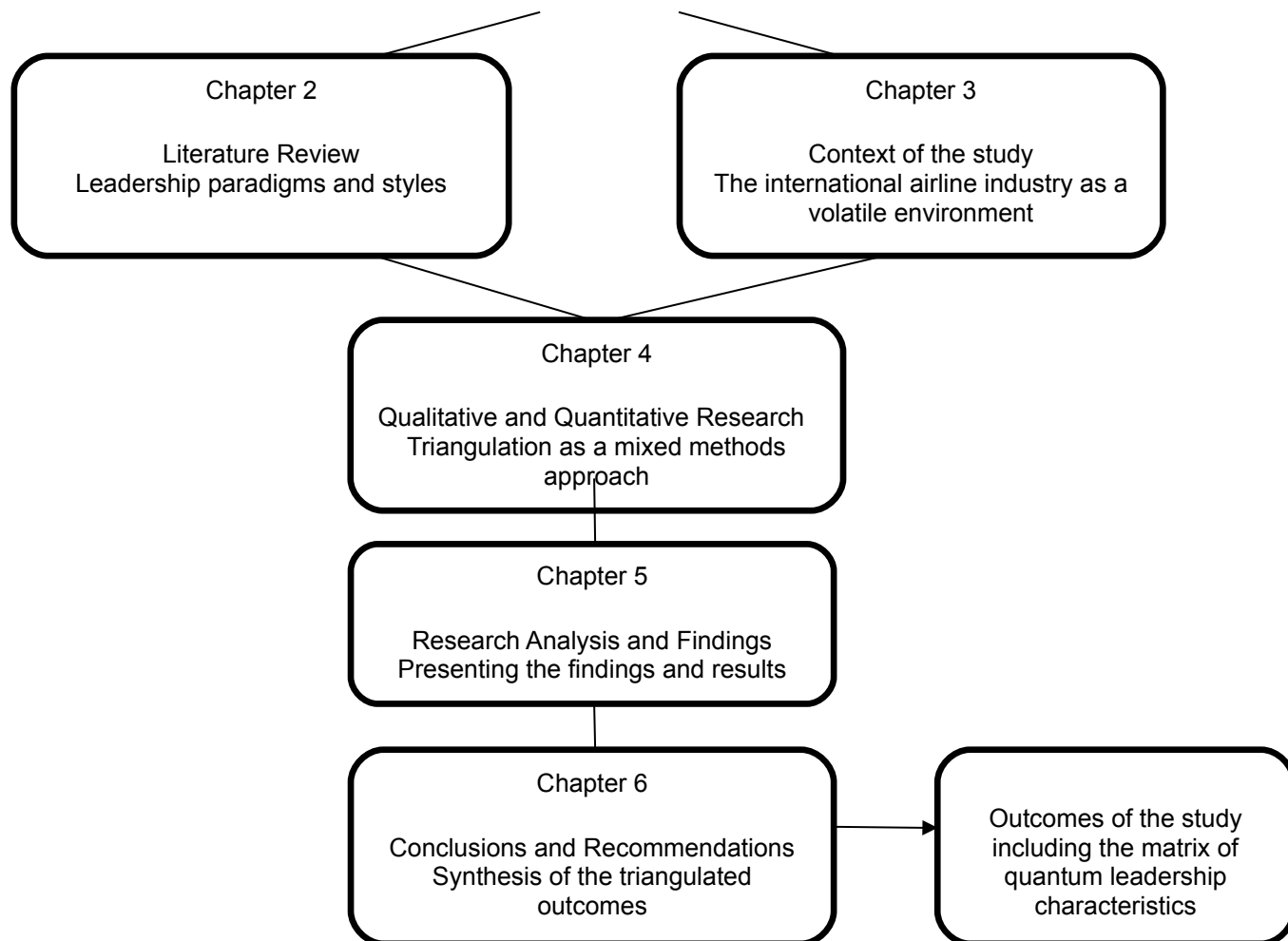
1.9.2 Phase 2: Normative theory

This phase covers the verification of existing leadership traits within a volatile environment and includes the triangulated research methodology where key players of the airline industry are interviewed, observed, or surveyed (Chapter 5). In this chapter, leadership are interviewed or surveyed in terms of their prevailing leadership styles, their subjective opinions on what characteristics are required to cope with the changing environment and their role in leading the organisation successfully. In Chapter 5, the different qualitative and quantitative information from Chapter 2 to 4 will be analysed, evaluated and tested for validity. Furthermore, deductive findings are discussed as the research attempts to find relations, from the data and information gathered, between quantum-like leadership traits and sustainable organisations in a volatile environment. Through triangulation of quantitative and qualitative analysis, a better research reliability will be achieved and suggestions are based on a greater variety of information. In Chapter 6, conclusions are drawn in a holistic manner and recommendations will be presented.

The following figure shows the dissertation roadmap summarising the research process to be followed in this dissertation.

Figure 1.1. Dissertation Roadmap





1.10 Conclusion

Over the centuries, various factors such as globalisation, technological innovations, inter-cultural dynamics and so forth, have changed the business environment and drive the need for new organic business models that have the ability to be more flexible and adaptable. In order to react to the fast pace rate of change and increasing complexities of environments, businesses reside in a transition phase where new theories and leadership models have opened the way of a differing worldview based on quantum science and associated theories. This new worldview not only influences how the world is perceived and what value systems are introduced to understand that new worldview. It also impacts the resultant leadership behaviours that are exercised as a response to the new value system and changes the nature of leadership as it has been known and taught for the past century.

It is therefore the purpose of this dissertation, through satisfying the primary and secondary research objectives, to answer the research statement, i.e. that a volatile environment triggers a new form of leadership that shows characteristics of a quantum paradigm.

Chapter 2: Leadership paradigms

2.1 Introduction

Although leadership has been studied for the past century, many scholars and practitioners are struggling to completely make sense of leadership research and understand the complex and diverse field of knowledge that leadership entails (Antonakis, Cianciola & Sternberg, 2004). This fact becomes vividly true by looking at the manifold definitions of leadership that

all focus on different aspects and characteristics of the term and usually reflect the originator's own leadership values (Schein, 2004; Fenwick & Gayle, 2008). As there does not exist one best definition and common understanding of leadership, the working definition for this dissertation reads as follows:

“Leadership is a process of exercising social influence on followers in order to reach a common vision and realizing goals by utilizing the full potential of individual and combined competencies.”

The definition is based on the assumption developed in Chapter 1 that leadership is mainly comprised of two components:

1. The social component whereby self-awareness and building trust play a crucial role.
2. The ability to empower people and provide vision in order to achieve a common goal.

However, at this point it has to be acknowledged that the definition of leadership is based on the assumptions, experience and worldview of a certain point in time and has evolved and changed throughout the centuries. From that perspective, the future definition of leadership might also change fundamentally as new knowledge becomes available that can disprove all hitherto assumptions of the world and trigger another shift in leadership paradigm.

The past has shown that the cycles for paradigm shifts in business become smaller and change is more rapid due to technological advances, globalisation, as well as continuous economic, political, social, and ecological change in the global environment (Guillory, Guillory & Harding, 2004; Wheatley, 2006). As external forces become more volatile, the need for constant change in a business environment is inevitable and reflects in ever changing leadership ideas, business models and organisational structures (Pellissier, 2004; Wheatley, 2006). The figure below depicts the development of the prevailing global business paradigms that have emerged since the agricultural age and developed further into the 21st century. The figure shows that the cycles become much shorter over time and last less than a couple of years in the future. It also underlines the statement that change becomes more rapid and organisations need to react more quickly to changing environments, technological developments and adapt to new business theories and organisational structures (Pellissier, 2004).

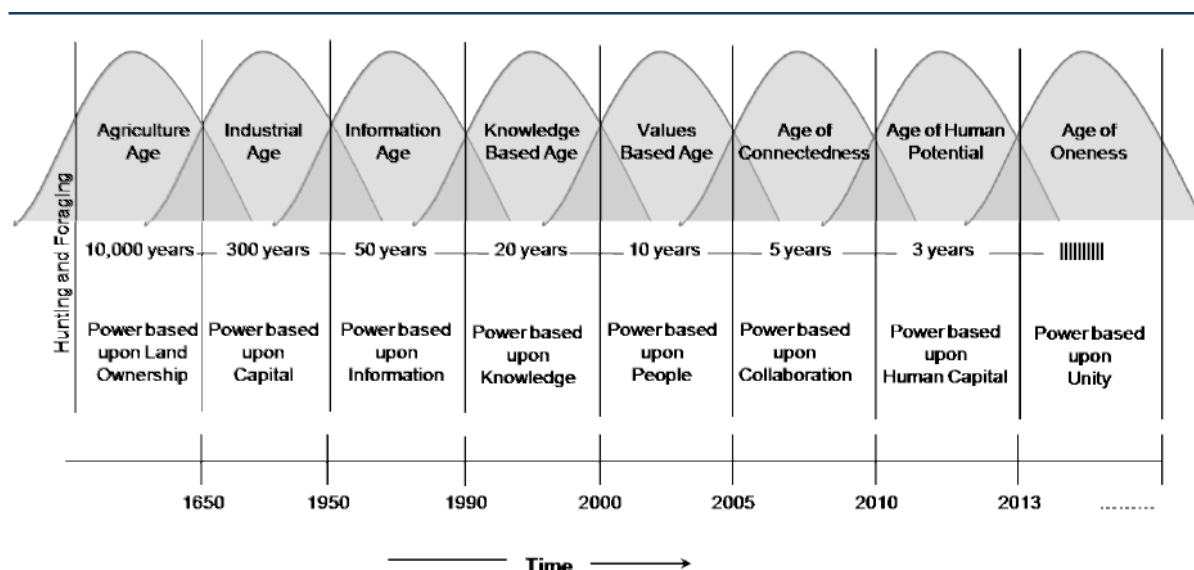


Figure 2.1. Global Business Paradigms

Source: Guillory & Guillory, 2009, p.1

The example, described and analysed in this dissertation, is the shift from a Newtonian-Cartesian leadership paradigm to an Einsteinian-Quantum leadership paradigm. In order to explore these two concepts in more detail, it is important to gain a deeper insight into the historic developments of scientific models and leadership paradigms on which the different assumptions and ideas in organisational management are based on. As the leadership concepts of the 21st century have evolved from former ideas and worldviews, it will be necessary to explore those values that have persisted throughout the centuries and those that have been abandoned.

As most existing leadership paradigms are still based on a Newtonian-Cartesian worldview, it is worthwhile to summarise the major scientific findings and management ideas built on the Newtonian physics and summarise the principle concepts of the Newtonian-Cartesian worldview as outlined in Chapter 1 (Ray & Rinzler, 1993; Hall, 2008; Denning, 2011).

2.2 Newtonian-Cartesian leadership paradigm

The “old paradigm” (formulated on the ideas of Bacon (1620), Descartes (1637) and Newton (1687)) provides a rational view of the world in which relationships are based on cause and effect, and where its originators believe that the dynamics of any complex system can be wholly understood by reducing the physical world into its most basic parts that operate in a

simple, linear way. Regarding the world as a well-oiled machine in which the universe is completely knowable and predictable, the Newtonian-Cartesian paradigm focuses on stability as fundamental goal and any deviation from the equilibrium is regarded as failure (Capra, Steindl-Rast & Matus, 1992; Howe, 1994; Pellissier, 2004; Wheatley, 2006; Olmedo, 2012). In a business context, the “old paradigm” implies that the various parts within an organisation should strive for order and stability to avoid destabilisation of the existing state and remain predictable, logic and regular at all times. In leadership, this is mainly achieved by a top-down approach where leaders exercise a control and command function and operate in bureaucratic and hierarchical structures with a focus on predictability and efficiency (Pellissier, 2004).

The different leadership eras in the past century strongly relate to the Newtonian-Cartesian paradigm and include numerous examples of cause and effect relationships, rigid rules and regulations as well as hierarchical structures to retain the order and control of the organisational environment. The following sections will describe some of the major leadership paradigms and provide a review of the different lenses of worldviews.

2.3 Leadership Eras: The different lenses of worldviews

The history of leadership paradigms and management theories is as old as mankind and dates back to those ancient times where kings and emperors still ruled the world and the managing of affairs of the state, armies and religious institutions was a day-to-day business (Vrba, 2006 and Bosman, 2009). Back then, as well as in the modern society today, the principles of leadership and its definition were heavily influenced by the prevailing worldview of the current era which is usually based on culture, religion, values of a society, and the individual perception of one's own reality (Funk, 2001). In other words, according to Funk (2001) “A worldview is the set of beliefs about fundamental aspects of Reality that ground and influence all one's perceiving, thinking, knowing, and doing.” Since certain events in history such as the Industrial Revolution, World Wars, or scientific discoveries have changed the perception and understanding of the world, so have leadership paradigms (Pellissier, 2004; Guillory, Guillory & Harding, 2004; Wheatley, 2006 and Olmedo, 2012).

For that reason, leadership paradigms and management theories have undergone an evolution and throughout the centuries many scholars and practitioners studied the process of management and developed various thoughts based on different assumptions, beliefs and understandings of the world which sometimes differ slightly or more fiercely from preceding

theories (Vrba, 2006). By starting to look at the beginning of the 20th century, leadership theories from the scientific management era emerged and developed further to new ideas of the Social Person Era and adjusted to new external factors during the Modern Era. All three eras will be discussed in the following sections with regards to their impact on the leadership characteristics of that time.

The evolution of these paradigms over time, will be presented below by identifying and summarising the most important leadership assumptions of each era. The eras are: scientific management era, the social person era and the modern era.

2.3.1 Scientific Management Era (1900-1920)

The era of scientific management, also referred to as Taylorism, can be described as the earliest attempt to apply science to the engineering of processes and management. Frederick Winslow Taylor (1856-1915) is often cited as the originator of this era by establishing a theory of leadership that analysed and synthesized workflows in order to increase overall operational efficiency, especially labour productivity (Vrba, 2006; Bosman, 2009).

The trigger for this worldview was the Industrial Revolution which provided the impetus for Taylor's philosophy of managing human and physical resources in a technologically advanced environment (Pellissier, 2004 and Vrba, 2006). His (Taylor's) scientific approach involved detailed observation and measurement of routine work to establish the optimum mode of performance – always taking into consideration the task itself as well as the importance of the individual and the motivation level in performing the job. Other influential thinkers on scientific management include Henry L. Gantt (1861-1919), Harrington Emerson (1853-1931) and Frank and Lillian Gilbreth; all added valuable input to the scientific management era and concentrated on different aspects thereof. For example, Gantt, who was a consulting industrial engineer, focused his research on control systems and developed the so-called Gantt chart, which is still widely used in businesses today for scheduling overlapping tasks over a specific period in time. Over and above, Gantt also investigated the importance of leadership quality and management skills in building effective industrial organisations (Vrba, 2006). Frank Gilbreth, on the other hand, focused on identifying “the one best way to work” by planning a job in such a way that the workers achieve maximum output with minimum effort through the effective interaction between job, worker and working environment (Vrba, 2006). Lillian Gilbreth combined work processes with industrial

psychology and thus researched the behaviour of individuals at their workplace (Vrba, 2006).

At a later stage, Henri Fayol (1841-1925) and Max Weber (1864-1920) developed the initial idea of Taylor further and established the so-called administrative management and bureaucratic management ideas, respectively. The difference to Taylor and other thinkers of that time is the focus of the research. While the aspect of the classical approach to management was dealing with the efficiency of individual workers, Fayol and Weber rather focused on the definition of the role and function of a manager in order to make the organisation more successful and efficient (Rodrigues, 2001). The theorists of this era believed to have found the “one best way” to manage an organisation and created principles (“The 14 Principles of Management”) that were believed to be able to solve all managerial problems (Rodrigues, 2001; Vrba, 2006 and Bosman, 2009).

With that, the scientific management era not only began to analyse work processes itself, but recognized the human element as an increasingly important factor in achieving efficiency and effectiveness in a production environment. The separation of work processes by creating different roles and responsibilities within an organisation automatically increased the levels of hierarchy (Rodrigues, 2001 and Pellissier, 2004).

2.3.2. Characteristics of the scientific management era

The major principles and aspects that have been established during the scientific management era are summarised in Table 2.1 below:

Table 2.1. Principles and aspects of the scientific management era

Principles	Aspects	Skills
Responsibility shift from worker to manager	Managers do the thinking; Workers responsible for implementation; micro-management; separation of processes (planning independent of execution)	High managerial control; organising; coordinating; commanding; planning
Use of scientific methods to determine most efficient way of performing a job	Specific ways of performing tasks	Standardisation; analysis, synthesis; logic; rationality; work ethics
Train worker to perform efficiently	Mass production	Elimination of waste; knowledge transfer into tools, processes

Select best person to perform the job	Personnel management; competent councils; Importance of leadership quality and management skills	and documentation; efficiency clearly defined ideas; common sense; discipline
Monitor worker performance	Incentive systems	Empiricism; greater effectiveness of rewards than penalties; forecasting

Source: Vrba, 2006; Bosman, 2009

Considering the above-mentioned characteristics of the scientific management era, the rational view of the organisation and of relationships within the workplace established by Taylor and the above authors are strongly related to the Newtonian-Cartesian worldview that suggests that the dynamics of a complex system (such as an organisation) can be broken down into its most basic parts (individuals, tasks, departments, etc.) that operate in a linear and predictable way (Capra, Steindl-Rast & Matus, 1992; Howe, 1994 and Pellissier, 2004). The scientific management era and its management paradigms also support the Newtonian-Cartesian view of leadership: organisations should strive for order and stability which, in leadership, is mainly achieved by a top-down approach where leaders exercise a control and command function and operate in bureaucratic and hierarchical structures with a focus on predictability and efficiency (Pellissier, 2004 and Olmedo, 2012).

As the scientific management era is based on the thought that organisations are rational systems that should operate in the most efficient and productive manner, the human aspects and the complexity and uncertainty of tasks have not been fully understood or were even neglected during that specific management era.

However, a few traits of the scientific management era are still visible in a modern business environment and are still believed to be effective (Vrba, 2006). One example of standardized processes and task separation can be found in manufacturing organisations, retail organisations and offices. Fast-food chains such as McDonald's or Burger King produce standardized products by organizing the work-steps in their smallest detail, designing the workplace to fit the process requirements, and thus trying to determine the most efficient way of the entire production process (Wilson, n.d.).

2.3.3 The role of leadership in the Scientific Management Era

As Fayol has argued during the scientific management era, the skills of management can be broken down into five basic administrative functions: planning, organising, commanding,

coordinating and controlling (Rodrigues, 2001). These were the five skills every manager should possess and which could be easily taught and learned in schools, colleges and universities. Thus, Fayol suggested that management is a skill that anybody can acquire as long as the basic principles are understood. Furthermore, Weber explained that managers were given legal authority based on their position in the organisational structure in order to enforce rules and policies (Bosman, 2009). As workers were used to obey to rules and regulations and only do what they are told by managers, bureaucratic leaders often have difficulties to think outside the box and struggle to adapt to changing environments (Bosman, 2009). In other words, the managers of the scientific management era were highly focused on exercising pre-set and acquired steps (planning, organising, controlling) in order to coordinate and control the workforce and manage the organisation. The organisation was considered to be a well-oiled machine where any minor or major problems could be fixed from within and by focusing on the individual parts that have caused the problem (Pellissier, 2004).

2.3.4 The Social Person Era (1930s-1950s)

During the Social Person Era, which was evolving and recognised during the time of the Great Depression (1930s), the focus of studying and analysing organisations shifted from a task-oriented approach to a rather person-oriented approach. While the thinkers of the scientific management era were concerned mostly with the efficiency and effectiveness of individuals, the new era realized the importance of relationships at the workplace as well as emotional factors in achieving optimal efficiency and productivity (Vrba, 2006 and Bosman, 2009).

Harvard Professor George Elton Mayo (1880-1949) and his team pioneered experimental research on human behaviour in work settings and suggested that managers should become more “people-orientated” (Vrba, 2006; Bosman, 2009). According to Mayo’s studies, “logical factors were far less important than emotional factors in determining productive efficiency”. (George, 1968, p.129 and Bosman, 2009). As a conclusion, Mayo suggested that the participation in social groups and “group pressure” has a bigger impact on worker productivity than organisational structures and management requests (Bosman, 2009). Another milestone of that era was laid by the work of psychologist Abraham Maslow (1908-1970) who provided his hierarchy of needs theory that suggests that individuals work to satisfy unfulfilled needs. It is still widely used and recognized in businesses and proposes that individuals can only achieve higher levels of satisfaction and efficiency when their basic

needs (psychological, security, social, esteem, and self-actualisation needs) are fulfilled (Vrba, 2006; McLeod, 2007). The realisation that esteem and self-actualization needs play an important role for individuals and thus also workers, Maslow's theory challenged the previously held views about organisations, motivation, leadership and job design and offered great opportunities for changing the assumptions of an effective work environment (Vrba, 2006; McLeod, 2007; Kremer & Hammond, 2013).



Figure 2.2. Maslow's Hierarchy of Needs

Source: McLeod, 2007

2.3.5 Role of leadership in the Social Person Era

The development from the scientific management era towards the social person era is a first step away from the rigid Newtonian-Cartesian worldview in which everything can be broken down into its smallest parts and problems are solved in a linear bureaucratic way. The realisation that an organisation consists of individuals and stakeholders with complex ideas, needs and requirements led to a new way of thinking where emerging managers and leaders identify a new role of authority and change their focus from tasks to people (Vrba, 2006; Bosman, 2009 and Kremer & Hammond, 2013). The role of managers was about to change away from a command and control person to someone who engages in a new leadership role that consults workers about change, incorporates their views in decision-making processes, identifies employees' needs, and shows concern for their mental and physical health (Bosman, 2009; Kremer & Hammond, 2013).

2.3.6 The Modern Era – Leading in the 21st century

As organisations grew and diversified more rapidly after World War II, technologies and markets developed, and the decision-making process became more complex, a new era evolved and management theories and business models have been changed and challenged by looking back at previous eras and developing ideas further or formulating completely new theories (Vrba, 2006). The milestones of the Modern Era are manifold and rapidly changing throughout the different decades. For example, during the 1950s and 1960s, the idea of integrating the needs of individuals and organisations became extremely important to organisational analysts and the study of organisational behaviour developed into a distinct field of interest in the modern era (Vrba, 2006). Furthermore, research into organisation theory broke away from the traditional intra-organisational perspective and focused on organisational management according to the requirements of the external environment instead. In the 1960s and 1970s the contingency theory dominated the field of organisational design and performance but already lost some ground in the 1980s where a configurational approach was most dominant (Vrba, 2006). Since the 1990s, new forms of organisations are continuously emerging since environments become more and more turbulent and existing leadership theories do not hold ground to explain and manage the increasing complexities (Vrba, 2006 and Wheatley, 2006).

The rapid changes of the modern era show that there is a constant development of ideas and theories in order to find the optimal way of managing rapid change and volatile environments and be prepared for the uncertain challenges that the future has to offer. However, the speed of the evolvement of new theories and available leadership knowledge is fast so that today's managers and leaders often struggle in keeping track of the latest ideas and finding the right mix of personal skills, know-how and intuition that become necessary to lead a modern organisation successfully (Barton, Grant & Horn, 2012).

2.3.7 The role of leadership in the Modern Era

The development from managing an organisation in "the one best way" during the scientific management era to applying the "right set" of leadership theories of managing modern organisations has been a rapid change in history and only occurred within one century. While managers in the past claimed to understand the complexities of the basic organisational parts and be able to predict future outcomes in the long-term, managers of the 21st century have a rather different viewpoint of managing an organisation successfully (Howe, 1994, Pellissier, 2004 and Barton, Grant & Horn, 2012). To operate in an uncertain

environment where the tempo of change is quicker and the dynamics are more complex, many chief executives feel overwhelmed by the volatile, globalised and hyper-connected management era and struggle to stay on top of all the things they need to know in order to fulfil their job successfully. Leading in an age of upheaval, to master personal challenges, to be in the limelight continually, and to make decisions under extreme uncertainty are common themes that emerged from structured interviews with leadership of some of the world's largest organisations (e.g. Josef Ackermann from Deutsche Bank, Ellen Kullman from DuPont, Moya Greene from Royal Mail Group and Carlos Ghosn from Nissan and Renault) (Barton, Grant & Horn, 2012).

From these findings, the assumption arises that the required skill set of leadership in the 21st century is as complex as the environment in which they have to manage and that traditional leadership theories are insufficient in achieving the desired organisational outcomes (Olmedo, 2012). Thus, a shift in leadership paradigm and skill set becomes inevitable

2.3.8 Leadership skills in the Newtonian-Cartesian worldview

As organisational managers of the 20th century had very little external resources to guide and develop their leadership skills, Henry Fayol's "14 Principles of Management" became an important tool to lead and manage organisations more effectively (Rodrigues, 2001). Those principles explained how managers should organise and interact with staff on a more productive level and reflect on the basic ideas of the Newtonian-Cartesian worldview. The 14 Principles and the relating six functions of management have been revolutionary concepts for organisational management at that time (Rodrigues, 2001).

A summary of Fayol's 14 principles and the according management functions can be found in Table 2.2 below. Fayol's principles as well as the leadership skills already identified in section 2.3.3 (Table 2.1) during the scientific management era will be used as representative leadership skills for a Newtonian-Cartesian paradigm throughout this dissertation.

Table 2.2. Fayol's Principles of Management and Leadership Skills

Principles	Skills	Assumptions
Division of Work	Specialised knowledge of managers and workers	Employees become increasingly skilled and efficient
Authority	Responsibility Accountability	Employees need orders to perform effectively
Discipline	Managers responsible for upholding discipline in organisations, command and control function	Methods for disciplinary action can vary

Unity of Command	Supervising	Employees should only have one direct supervisor
Unity of Direction	Planning Visionary Goal oriented	Teams should work under the direction of one manager, using one plan to ensure correct coordination of actions
Subordination of individual interests to the general interest	Commitment	Group interests more important than individual interests
Remuneration	Fairness	Fair remuneration for everyone
Centralisation	Involving employees in the decision-making process	Important to keep a balance
Scalar Chain	Sense for hierarchies	Awareness of where the individuals stands in the organisational hierarchy/ chain of command
Order	Coordinating and forecasting	Everything in the organisation should have its place
Equity	Consistency	Managers should treat their staff fairly at all times finding the right balance between discipline and kindness
Stability of tenure of personnel	Resource planning skills	Managers should strive for minimizing staff turnover
Initiative	Empowerment Inspiration	Managers should create space for employees to carry out and create plans
Esprit de Corps	Team player Positivity	Organisations should promote team spirit and unity

Sources: Rodrigues, 2001; Management Innovation, 2008

2.3.9 The Newtonian-Cartesian organisation

Considering the historic development of different leadership ideas and organisational structures during the Newtonian-Cartesian paradigm which has persisted over the past 300 years, it becomes possible to visualise the idea of a Newtonian-Cartesian organisation. The Newtonian organisation is considered a well-oiled machine in which things have been broken down and reduced into their most basic parts in order to be able to understand the whole and solve problems right there where they occur (Pellissier, 2004; Wheatley, 2006, Olmedo, 2012). In a Newtonian organisation every piece knows its place and operates within predetermined and self-created boundaries. People are limited to certain roles and responsibilities, processes follow discrete steps and the line of communication consists of rigid numerical data which aims to make predictions about the future (Wheatley, 2006). According to Danah Zohar (1990, in Wheatley (2006), p.19) “The whole corpus of classical physics and the technology that rests on it is about the separateness of things, about constituent parts and how they influence each other across their separateness”. In that classical view, an organisation and its parts could be viewed objectively from the outside and

cause-and-effect relationships would allow for a rational, predictable controlling of the whole (Capra, Steindl-Rast & Matus, 1992; Howe, 1994, Pellissier, 2004 and Wheatley, 2006). This rigid and machine-like view of an organisation resulted in the diminishing of the human aspect of organisational life where people are managed in a systematic approach by appointed leaders who exercise their share of power and managerial control (Wheatley, 2006). This resultant linearity of processes and limits of responsibilities of the individual makes a Newtonian-Cartesian organisation passive, reactive and slow in operating in a rapidly changing environment as authority and decision-making power is only given to selected people and departments and individuals often work in isolation of each other (Gleeson, 2013). The result of departmental isolation is silo-thinking where people stop thinking of the organisation as a whole living entity but encourage the reduction into individual parts and their objective contribution to the overall organisational success or failure (Gleeson, 2013).

2.4 Einsteinian-Quantum leadership paradigm

The “new paradigm” (based on Einstein's and Planck's discovery of quantum physics) is built on a combination of various scientific concepts including relativity theory, quantum mechanics and chaos theory. These imply, contrary to the Newtonian-Cartesian paradigm, that the world is not predictable but rather probabilistic; that things cannot be separated from the whole but have to be observed holistically; and that chaos creates a new level of order rather than destabilisation (Pickup, 2000; Pellissier, 2004; Wheatley, 2006 and Hall, 2008). By accepting these statements as mere facts, the understanding of the world is changing dramatically and presenting an alternative to the Newtonian-Cartesian paradigm. According to Pickup (2000), the alternative paradigm implies that leaders and managers in a business environment need to change their way of thinking and learn to consider many possible interpretations for problem solving instead of identifying one as the ultimate and best truth. Analysing past and present events does not assist in predicting future outcomes and individual parts (e.g. individuals or organisational departments) cannot solve problems holistically.

2.4.1 Chaos theory and Complexity theory in the Einsteinian-Quantum paradigm

As opposed to Newton's idea that the world functions like a well-oiled machine, in a predictable and linear universe where the relationships between cause and effect are simple and clear, chaos theory suggests the exact opposite: it is the study of complex, non-linear, dynamic systems (Levy, 1994; Pellissier, 2004, Olmedo, 2012 and Zohar & Wray, 2015). The

core idea of chaos theory, which has crossed many disciplinary lines from ecology to medicine, electronics, and the economy, entails the following: the smallest change (that might even appear as insignificant) in a complex system can have a huge impact on that system's overall behaviour (Levy, 1994; Pellissier, 2004 and Mason, n.d.). The most popular example for that observation stems from meteorologist Edward Lorenz (1963) who discovered one fundamental principle of the chaos theory - the so-called Butterfly Effect (Levy 1994 and Mason, n.d.). The Butterfly Effect suggests that a butterfly flapping (or not flapping) its wings in Tokyo can impact weather conditions in South Africa. In more general terms, the Butterfly Effect proves that a complex system such as the atmosphere consists of unstable forces that allow the slightest change in atmosphere to have an exponentially larger impact on that system elsewhere (Levy, 1994; Mason, n.d.). Considering organisations to be comparable complex systems (consisting of and depending on individuals, stake holders, suppliers, political decisions and economic developments), suggests that organisations show a similar behaviour to change and outcomes in business become rather unpredictable. However, although results are unpredictable, chaotic systems do produce outcomes that are bounded and create patterns that can be explained by mathematical constants – therefore showing signs of order in chaos, and consequently, chaos in order (Levy, 1994; Pellissier, 2004; Wheatley, 2006 and Mason, n.d.). This means, chaotic systems can be both determinate and unpredictable at the same time (Levy, 1994 and Pellissier, 2004).

More recently, however, chaos theory has been replaced by the idea of complexity theory as both concepts theoretically inherit similar features but are based on the study of two complete different systems. Chaos theory as well as complexity theory study non-linear and dynamic systems, both theories suggest that outcomes are unpredictable but follow certain observable patterns, and both ideas conclude that there is order in chaos (Levy, 1994; Pellissier, 2004; Wheatley, 2006; Fisher, 2012). However, chaos theory focuses on the study of deterministic systems, whereas complexity theory applies to systems that are non-deterministic and therefore seems more applicable to social systems (e.g. organisations) than chaos theory (Fisher, 2012). The key difference between the two concepts can be defined by the self-organisation capabilities and the indeterminable relationships of independent elements within complex systems (Monti, 2010; Fisher, 2012). Some of the main characteristics of a complex system also include a large number of similar but independent elements, persistent movement and responses between different elements, entire system adaptiveness to new situations, self-organisation in which order forms spontaneously and a progression in complexity that makes the system larger and more sophisticated over time (Monti, 2010). As the interactions between organisational

dependencies do not follow any determinable rules and are under no circumstances predictable, complexity theory should be applied to describe current business environments.

2.4.2 The Quantum Organisation

As the main characteristics of a Newtonian-Cartesian organisation have been established throughout this chapter, it is essential to also understand and explore the different features of a future quantum organisation and its required leadership capabilities. Based on the suggested set-up of the quantum organisation, it will be possible to draw conclusions about the required leadership skills that are necessary to enable new structures and mind-sets in a quantum leadership paradigm.

From a quantum point of view, the concepts of cause-and-effect, control, fixed structures, and predictability do not exist. According to Zohar (1990, in Wheatley (2006)) the quantum world is “a vast porridge of being where nothing is fixed or measurable ... somewhat ghostly and just beyond our grasp”. Put in a business context, this metaphor does also apply to modern organisations. In ever changing environments, fixed structures are not agile enough to react to new situations, future scenarios are often unpredictable and simply not measurable in advance and it seems that modern managers often struggle to retain the desired order and control of the complex tasks they have to manage (Wheatley, 2006; Olmedo, 2012).

In a quantum organisation, the key for sustaining in a volatile and uncertain environment is the focus on relationships and co-creation (Wheatley, 2006 and Porter O’Grady & Malloch, 2014). Based on the quantum idea that nothing exists independent of its relationships with others, that individuals cannot be separated from an organisational system and vice versa, and that everyone creates his/her subjective reality, it becomes impossible to reduce an organisation to a clock-wise machine that can be controlled objectively by the individuals working in it (Zohar & Marshall, 2004). The quantum idea suggests that both people and organisational systems influence each other at all times and thus create a relationship that evokes the present reality (Wheatley, 2006 and Zohar & Wray, 2015). If this theory holds true, the concept of relationship has a major impact on all levels of an organisation including individuals, structures, organisational design, processes and leadership.

In a place where relationships matter and the organisational reality is co-created by its members, the concepts of hierarchical structures, managerial control, sole power of

individuals, and intensive strategic planning processes become almost redundant as people are participating in their own created environment and only the interaction of the whole determines the present state of an organisation (Wheatley, 2006).

In a quantum organisation, members realise that each individual contributes to the performance of the organisation and is intrinsically motivated to positively support the corporate environment and therefore does not need a designated leader to monitor and control performance at all times. Instead, team work, participative management and self-managed teams form the basis for healthy relationships and a positive energy that encourages individuals to be creative, productive and satisfied in their workplace (Wheatley, 2006; Porter-O'Grady & Malloch, 2014 and Zohar & Wray, 2015). However, the quantum organisation also acknowledges that every individual is unique with complex emotional, motivational and personal needs. Therefore, emerging leadership have to understand that quantum leadership is far more complex than simply managing tasks and behaviours. In the future organisation, soft skills like emotional intelligence, spiritual intelligence, fostering strong and meaningful relationships with individuals, sharing information and letting go of control become key features of a successful leader (Wheatley, 2006; Porter-O'Grady & Malloch, 2014 and Zohar & Wray, 2015).

It is the realisation that change is unstoppable, that people co-create their present reality and that everything is related to each other which makes the quantum organisation so different in terms of persisting organisational models of the 21st century.

2.4.3 Leadership skills in the Einsteinian-Quantum worldview

The question to what extent (if any existing) leadership skills are required in an Einsteinian-Quantum worldview is rather difficult to answer as the theory suggests that no fixed skill set yet exists that can help to steer through the dynamics of an uncertain environment (Pellissier, 2004; Wheatley, 2006 and Olmedo, 2012). As the future is unpredictable and no "one best way" of managing situations exists, it is very difficult to create a list of skills that are necessary to successfully manage a volatile environment. The following sections provide recommendations of possible leadership traits that might become useful in dealing with internal and external uncertainties and managing the complexities of an unknown and chaotic future. The great accessibility to leadership information and new theories is often overwhelming and leadership of the 21st century struggle to keep up with the increasing pressure of being the "perfect leader" and staying up-to-date with the latest theories and

suggested skill sets (Barton, Grant & Horn, 2012). For that reason, only selected leadership skills will be mentioned as possible Quantum leadership traits. However, their actual suitability in managing complex environments has yet to be established. All mentioned quantum leadership skills will be based on the idea of a future quantum organisation operating in a state of constant chaos and high levels of complexity.

2.4.4 Quantum leadership skills

Based on the concept of a quantum organisation, a list of key leadership skills can be established. The core capabilities of a quantum leader will be summarised and listed in Table 2.3 below. However, it is important to note that this list is not all-inclusive and continuously evolving.

Table 2.3. Quantum Leadership Skills

Principles	Skills	Assumptions
Emergent Leadership	Taking responsibility; Shared decision-making, Listening	Leadership emerges from the combined active engagement of all members of an organisation
Emotional Intelligence (EQ)/Competence	High regard for colleagues and subordinates, Self-awareness, Mindfulness, Openness, Personal humility, Willpower, Compassion, Resilience, Impulse control, Appreciation of knowledge, Passionate optimism	Emotional competence involves the interpretation and translation of personal feelings into the workplace; it enables leaders to manage meaning between individuals and groups within the organisation
Holism	Holistic thinking	Organisations are holistic rather than fragmented; work processes and individuals are interconnected
Intrinsic Motivation	Trust in people, Collective wisdom, Mentoring, Encouragement	Employees are intrinsically motivated to act in the organisation's best interest
Dissipative Leadership	Acceptance of continuous change, Agility, Problem-solving oriented	The environment is considered to be a complex, dynamic, dissipative system
Integrated Leadership	Ability to manage relationships, Form sustainable relationships, Commitment to value-based interventions, Building rapport among members of the organisation	Leaders recognize the importance of personal relationships and foster their development; leaders recognize the interconnectedness between individuals
Awareness	Self-knowledge,	Realisation that individuals

	Self-consciousness; Appreciation for ambiguity and paradox	possess unique patterns and perceptual filters that influence the interaction with others
Presence	Ownership of decisions, Involvement in management Responsibility Reliability	Leaders need to show that they are caring about what is happening; presence creates connectedness and participation
Spiritual Intelligence (SQ)	Sense of vocation Spontaneity Compassion Celebration of diversity Humility Ability to re-frame Ask fundamental “Why”-questions Field independence Positive use of adversity	Leaders are able to apply their spiritual intelligence to analyse and re-frame situations; they are connected to their higher self and have a deep sense of vocation and selflessness; leaders accept the existence of multiple realities and are able to put themselves in the position of others

Source: Zohar & Marshall, 1999; Zohar & Marshall, 2004; Porter-O’Grady & Malloch, 2014, pp. 391-413; Zohar & Wray, 2015

2.5 Gap analysis: Newtonian-Cartesian leadership skills versus Einsteinian-Quantum leadership skills

In actual management terms, a gap analysis is adopted in order to compare the actual *performance* of an organisation with the potential future *performance* and identify those steps that are necessary to achieve the desired state. In this dissertation, however, the initial concept of a gap analysis has been slightly modified and adjusted in order to identify the *features* of a Newtonian-Cartesian organisation and compare it to the desired *features* of a Quantum organisation. The gap analysis then describes those steps that have to be fulfilled and undertaken in order to reach the future state. Table 2.4 depicts some of the major gaps identified between a classical organisation and a quantum organisation. The main focus of the gap analysis includes the following five factors consisting of organisational structure, shared values and culture, response to change, leadership skills, and leadership styles. However, it is important to note that this list is not all-inclusive and continuously evolving. Furthermore, it is a subjective representation of individual conclusions and not by all means comprehensive.

Table 2.4. Gap Analysis for a Newtonian-Cartesian versus Quantum Organisation

	Newtonian Organisation	Quantum Organisation	Gap
Structure	hierarchical structures to retain order	flat hierarchy	reduction of management levels in the organisation
	organisation is broken down into individual tasks, departments, roles, etc.	organisation is a holistic entity where people influence the system and vice versa	philosophy change/paradigm shift within the entire organisation towards quantum thinking
	processes follow concrete steps and are exercised by people with certain roles	processes flow freely and leaders arise out of the situation	no rigid job descriptions; strengths-based management; self-organising teams
	cause-and-effect relationships	non-linear relationships	
	high managerial control	very low managerial control; high employee empowerment	one of the end products of the to-do's/philosophy changes will automatically fulfill this short-fall
	static/rigid structures difficult to change	dynamic structures that can be changed easily	it will become an end-result of few management levels and self-organising teams
	Order	Disorder	Acceptance that organisation operates in a constant state of chaos and that complexity cannot be controlled internally
Shared Values/ Culture	people have to be constantly motivated to perform well (renumeration, acknowledgement, promotion, etc.)	people are intrinsically motivated to perform high	recruiting the "right" people;
	corporate culture and values stimulated by top-management	people co-create the corporate culture and determine prevalent values	recognition that values are intrinsic; pre-determined values from individuals create the organisational culture; in a holistic environment values cannot be determined by only a few people
	organisational interests put above individual interests	each individual is recognized as being unique	understanding that people influence and system and vice versa; focus on individual well-being to achieve intrinsic motivation
	silo-thinking	fostering of meaningful relationships	holistic thinking

Response to external change	change triggered mostly by external factors that influence the system from the outside	change is not only triggered by external factors, but also from the people within an organisation as systems and people influence each other at all times	
	change avoided in order to seek equilibrium	change accepted as natural	philosophy change/paradigm shift within the entire organisation towards quantum thinking
	environment is predictable & stable	environment is unpredictable and complex	acceptance of complexity of the environment
Leadership Skills	planning	agility	
	organising	problem-solving oriented	
			recognition of each employee as being unique; intrinsic motivation within individuals; individuals taking responsibility
	commanding	trust in people	high focus on relationships instead of individuals tasks
	coordinating	building rapport among members of the organisation	constant organisational learning and support of individual strength, empowering people
	controlling/supervising	mentoring	no gap
	responsibility	responsibility	no gap
	accountability	reliability	no gap
	commitment	ownership of decisions; involvement in management	no gap
	fairness	listening, appreciation for ambiguity and paradox	
	forecasting	acceptance of continuous change	move away from strategic planning towards strategic thinking
	empowering people	encouragement	no gap
	inspiration	commitment to value-based interventions	no gap
	hierarchical thinking	shared decision making, letting go of control	encouraging collective wisdom and multi-vision
			enabling the free flow of information throughout the organisation; raising the knowledge level among employees; multi-vision instead of one single truth
	team player	collective wisdom	
	positivity	passionate optimism	no gap
		self-awareness	
		mindfulness	
		openness	
		compassion	
		resilience	
		holistic thinking	
		self-knowledge/self-consciousness	
		managing and building sustainable relationships	
Leadership Style	Control-and-Command Leadership	Emergent Leadership	
	Strategic Leadership	Dissipative Leadership	
		Integrated Leadership	

Sources: Zohar & Marshall, 1999; Rodriguez, 2001; Pellissier, 2004; Wheatley, 2006; Vrba, 2006; Bosman, 2009; Olmedo, 2012; Porter-O'Grady & Malloch, 2014

2.6 Conclusion

After analysing the evolution of classical as well as new leadership theories over the past century and outlining their major characteristics in regards of leadership traits and behaviour,

the conclusion arises that many Newtonian-Cartesian features are still prevalent in the current business environment and to a great extent shape the way of how organisations of the 21st century are operated. Furthermore, Newtonian-Cartesian characteristics still determine those leadership skills that are considered to be value adding. However, the realisation that existing leadership theories are inadequate in managing complex and continuously changing environments is underway. Modern organisations reside in a state of transition where classical worldviews prove more and more insufficient in coping with the complexity and volatility of certain industries and new theories are emerging on a continuous basis. As seen in the past, most newly emerging theories are based on previous ideas but usually inherit new concepts that are going to be tested in reality. Therefore, the whole principle of emerging leadership paradigms is based on trial and error where positive features prevail and inefficient features become redundant and disappear. Leaders and managers of the 21st century realise that a shift in leadership thinking is inevitable and that classical approaches are no longer sufficient in providing the necessary skill set for managing complex environments. In an interrelated world in which the focus on individuals, personal well-being and a healthy work-life-balance becomes more and more important, the emphasis on classical features such as control, command and power decreases. The gap analysis in section 2.5 underlines such trends and depicts those gaps that are still prevalent between classical organisations and future quantum organisations and outlines possible steps that could be undertaken in order to reach the new quantum stage. Major focus areas include organisational structure, response patterns to change, organisational culture and values, leadership skills and leadership styles. In all these areas, a drastic change of leadership behaviour is recommended and necessary in order to reach the anticipated future state. The main drivers for enabling quantum leadership include empowering and accepting the unique qualities of individuals, fostering sustainable relationships with stakeholders and letting go of individual power to encourage collective wisdom.

This chapter attempted to provide answers to two of the secondary research objectives which aimed at determining the characteristics of a Newtonian-Cartesian and Einsteinian-Quantum leadership style.

Chapter 3: The Airline Industry

3.1 Brief history of the airline industry

The first scheduled passenger flight took off in Florida on the 1st of January 1914 when Glenn Curtis designed the first seaplane that carried one passenger at a time across Tampa Bay. For the 23 minute flight, the company charged a \$5 one-way fare and offered two operating flights per day. Since then, the development of faster and more economic planes has been rather slow and was overshadowed by the military use of aircrafts during World War I where flying was associated with bombing runs and air surveillance as well as a critical endeavour due to the simplicity of the aircrafts. Only in the 1930s, aircraft manufacturers took on the challenge to make commercial aviation more attractive and build larger and safer aircrafts (Airlines for America, Chapter 1 1995-2013).

As there were so many improvements during that era, this time span is believed to be the most innovative decade in aviation history. It produced the first modern airliner which was built by Boeing (Model 247) in 1933 and was capable of carrying 10 passengers at a speed of 155 miles an hour (ca. 250 km/h) (Airlines for America, Chapter 1 1995-2013). Ever since, the airline industry experienced continuous and steady improvements including radio communication, air traffic control, pressurised cabins, the foundation of the Air Travel Association (ATA), as well as the innovation of radar, and jet engines (Airlines for America, Chapter 1 1995-2013).

As a downside, the airline industry was heavily controlled and regulated by governments as it resembles a public entity. Airlines were not allowed to determine which routes to fly and what fares to charge as those decisions were made by the government agency known as *Civil Aeronautics Board (CAB)*. Only in 1978 the situation changed dramatically when American President Carter passed the *Airline Deregulation Act* and thus opened up free market competition for aviation companies. Now, customer demand, total cost of operation and airline network competition determined the prices and service levels which constitute the first components of a volatile industry environment (Jiang & Hansman, 2006; Airlines for America, Chapter 2 1995-2013; Lockan, 2013; Harris, n.d.).

Post-deregulation, new carriers promptly entered the market, prices dropped as competition and numbers of customers increased and new routes and layovers have been established.

The airline industry boomed until its first set-back in the 1980s where air traffic controller strikes temporarily slowed down the growth and led to industry recession. In the 1990s, the industry recovered and returned to new record heights of profitability. After that momentarily high, the situation changed again in 2001, where the events of 9/11 resulted in another economic downturn where commercial travel decreased substantially while fuel costs and labour increased (Peterson, 2010; Harris, n.d.).

The recovery of the industry since the terrorist attacks has been very slow and the airline industry struggled to remain viable throughout the first decade of the millennium. The challenges have been manifold: the outbreak of SARS reduced air travel and increased security procedures at airports; oil prices rose dramatically between 2000 and 2008 and showed a 200% increase; the economic downturn at the end of the decade resulted in decreased passenger numbers and further reduced air travel (Peterson, 2010; Harris, n.d.). Additionally, factors such as increasing competition, economic volatility, rising fuel prices, commoditisation, substitution, and heightened customer expectations further contribute to the increasing volatility of the industry environment (Peterson, 2010; Lockan, 2013). To overcome these challenges in the future, airlines have to develop sustainable solutions and re-consider existing business models to improve the overall performance of the airline industry (Pearce, 2013).

3.2 Key sectors of the airline industry

During the early years of scheduled passenger flights, the level of competition among different airlines was rather low since air travel was regarded as public entity and heavily controlled by the government (Airlines for America, Chapter 2 1995-2013). All airlines established during the years prior to the *Airline Deregulation Act* in 1978 are referred to as 'legacy carriers'. Only after the deregulation of the aviation industry, free market competition set in and other industry key players started to appear. In order to make air travel more affordable for the public and address new target groups, low cost carriers entered the market and competed with legacy carriers on a pure cost basis by offering cheaper ticket prices (Shah, 2009). A third industry player is comprised of the so-called Middle Eastern carriers. With their extensive access to oil and strategic positioning in the world, Middle Eastern carriers are a fast growing sector that does not only compete on a cost level with legacy and low cost carriers but also offers superior services to passengers (Webber, 2012).

The airline industry is primarily split into three main sectors that serve different customer

needs and concentrate on different key selling points. These sectors are: legacy carriers, low cost carriers, and Middle Eastern carriers. Their main features are outlined in Chapter 1, Table 1.1.

While ‘legacy carriers’ focus on their strong fleets, alliances with well-established airlines and high customer service standards, low cost carriers, on the other hand, not only cut back on costs to offer compatible prices but also reduce passenger service. Middle Eastern carriers combine high service levels with affordable prices and expand their target markets quickly (Zhu, 2009; Business Management Magazine Online, 2013).

3.2.1 Definition of Legacy Carriers

The term ‘legacy carrier’ refers to those airlines, especially in the United States of America, that have established interstate routes by the time of the route liberalization in 1978 and were directly affected by the *Deregulation Act* (Dempsey, 2008). The major difference to its competitors is the provided service level before and during a flight. For example, legacy carriers typically offer first class and business class options to passengers; they have frequent flyer programs, airport lounges, and are part of an alliance which offers same or similar services. Additionally, the aircrafts are usually equipped with an in-flight entertainment system, the cabin crew provides meal service and the space between seats is bigger than in the planes of budget airlines (Shah, 2009).

3.2.2 Definition of Low Cost Carriers

Low cost carriers, also known as budget airlines, usually run a business model that offers lower air fares than regular carriers. However, in order to be able to provide budget prices, costs have to be minimized, and often compromised, at other ends. The result is a limited passenger service as well as reduced customer service options (Shah, 2009). The planes are smaller and equipped with more seats than regular carriers, flight times are scheduled during off-peak times and the choice of destinations is often limited to secondary airports. Other traits of budget airlines include unreserved seating, no transit options, no lounges or frequent flyer options, fast turnaround times, no business or first class opportunities, as well as extra service charges for any additional requests (e.g. check-in baggage, meals on board or flight changes). To further reduce operating costs, most low cost carriers generate their profit through online sales as this business model eliminates the need for travel agencies (Shah, 2009). In summary, low cost carriers concentrate on the lean flight operation and cut down on various passenger service levels to reduce operating costs to a minimum.

The price difference between Low Cost Carriers and Legacy Carriers between 2006 and 2011 is depicted in Figure 3.1.

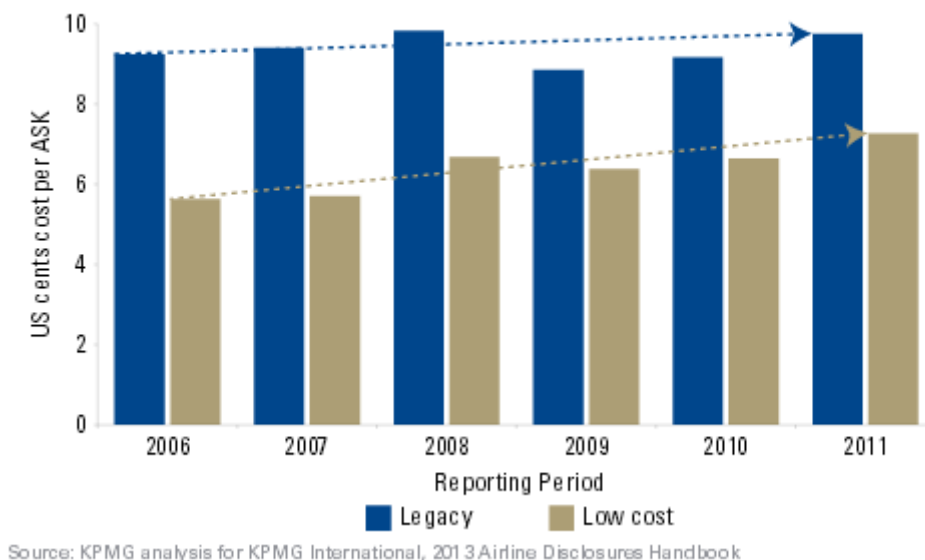


Figure 3.1. Legacy versus low cost carrier cost per ASK 2006 to 2011 (excluding impairment charges)

Source: Lockan, 2013

3.2.3 Definition of Middle Eastern Carriers

Situated directly between Asia and Europe, the Middle Eastern countries have a favourable position in terms of proximity to current growth markets such as South East Asia, China and Africa. The airlines of the Middle East are responding to increased passenger demands from these countries by expanding their national airports and investing in new routes, especially to Latin America and Africa that have not been extensively covered by existing legacy carriers (researchomatic, 2012). Besides offering new routes, Middle Eastern carriers manage to combine comparably low airfares with high service level standards for passengers. This becomes possible by receiving and enjoying regular cost advantages (ranging from fuel and direct subsidies, cheap airport charges, tax advantages and low interest rates) that puts competitors at a disadvantage (Webber, 2012). For example, Middle Eastern airlines offer some of the cheapest premium seat airfares in the world and thus almost cut ticket prices in half compared to the price range offered by legacy carriers. At the same time, Middle Eastern airlines provide high standards of passenger service and regularly rank in the top ten list of the World's Best Airline survey by providing the same or even improved services than legacy carriers (Webber, 2012).

According to the Skytrax World's Best Airline survey (2015), which is based on the votes from 18 million airline customers across 160 countries, Qatar Airways is the leading airline in the world, followed by Singapore Airlines at position 2, Cathay Pacific Airways (position 3), Turkish Airlines (position 4), Emirates (position 5), and Etihad Airways (position 6).

3.3 Factors influencing the profitability of the airline industry

As briefly outlined in section 3.1, there are several factors that have an influence on the profitability of the airline industry. The most important factors are: especially high fuel prices, an economic climate characterised by a European debt crisis, slowing growth in China and a slow economic recovery in the United States are causes for extremely tight profit margins in the airline industry running at 0.6% in 2012 and 1.6% in 2013 (The Economist, 2012; CAPA, 2012). Although airlines have already made efforts to adjust to the volatile situation by investing in new fleets, adopting more efficient processes and carefully managing capacity, IATA chief executive Tony Tyler (2012) assumes that “despite these efforts, the industry’s profitability still balances on a knife-edge, with profit margins that do not cover the cost of capital” (The Economist, 2012).

The causes for the extreme low profitability and volatile market conditions in the international airline industry are manifold and not limited to economic features such as rising fuel costs or increased competition (Dempsey, 2008; Pearce, 2013). The following sections will outline major reasons for the critical financial performance of the airline industry post-deregulation and discuss some of the problems in detail.

3.3.1 Supply

In the airline industry, the capacity of an airplane and its available seats is measured by the so-called ‘passenger load factor’ (PLF). The load factor is useful for calculating the average occupancy on airline routes or other transport vehicles in order to determine the overall profitability and revenue potential of various routes (Lockan, 2013). That means, the more seats are sold per aircraft, the higher becomes the passenger load factor and vice versa.

Although the load factor hit a new high in August 2013 with 83.4% utilized seats in the global aviation industry and only decreased slightly in 2014 to 79.1%, airlines inevitably produce excess capacity (Dempsey, 2008; Paris, 2013 and Cederholm, 2014). From the mid-1950s until the end of the 20th century, airlines barely achieved a load factor exceeding the 70% mark which means, on an annual basis, about one third of the seats in an aircraft remained

unsold and airlines have not been able to fully utilize their assets effectively (Dempsey, 2008).

However, there is a fine line between a low passenger load factor and the optimum load factor. For most airlines, a 100% PLF would not be desirable either due to the standard overbooking strategy. Airlines usually overbook a flight by around 10% of passengers to account for so-called No Shows – passengers who do not show up for the flight on time or re-schedule their flights on short-notice (Lockan, 2013). In general, the rule applies: the higher the load factor, the more often prospective customers have to experience service inconveniences by finding their preferred departure flight unavailable or being offered an alternative schedule on short-notice. Studies by Boeing have shown the following: If the passenger load factor averages 60%, 7% of flights will be fully booked and unavailable for late-booking passengers. When the passenger load factor reaches 70%, already 21% of potential customers have to be turned away (Dempsey, 2008). Therefore, airlines have to provide a certain extent of excess capacity to customers in order to account for overbooked passengers as well as to allow for late-booking passengers to purchase a seat on the desired departure flight. With that, airlines have to draw a line between the most favourable utilization of their aircrafts in order to produce revenue and the provision of optimal customer service.

Furthermore, the demand in the airline industry is highly cyclical and dependent on certain times of the day, days of a week and months of a year. In low seasons or off-peak times the demand is rather low and planes have to fly almost empty. During peak times the demand and load factor are extremely high. Unfortunately, it is very difficult to compensate for the off-peak times so that services in form of passenger seats are lost forever as soon as the aircraft is moving towards the runway resulting in lost profits for the airline (Dempsey, 2008).

In order to avoid empty seats and utilize the capacity of an aircraft most efficiently, many airlines sell their remaining ticket contingent for dumping prices even if that means that tickets are sold at a loss. This strategy automatically influences other airlines that have to adjust their ticket prices and sell them below value in order to stay competitive (Dempsey, 2008; Sundaresan, n.d.).

The competitive pressure described above is one reason why airlines struggle to cover their high maintenance and fixed costs and the profit margins remain low for the entire industry.

Unlike other service industries, the airline industry is dependent on expensive equipment and facilities (e.g. airplanes, flight simulators, maintenance hangars) to run efficiently which makes it a highly capital-extensive business (Dempsey, 2008; Lockan, 2013). By selling tickets below value or even at a loss, airlines struggle to generate enough revenues to cover operating costs (The Economist, 2012).

3.3.2 Demand

As already mentioned in section 3.3.1, the demand for flights is rather cyclical and dependent on external factors and the type of passenger travelling. Therefore, the demand can be split into long-term and short-term market cycles including fluctuations of greater and lesser demand depending on time of day, day of week, and season. For example, business passengers usually travel between 7-9am on weekday mornings and 4-6pm on weekday afternoons. Thus, flights are scheduled more frequently between those hours of the day to cover the increased demand of business travellers. Leisure travellers, on the other hand, are highly dependent on seasonal factors and therefore, the demand for leisure trips is higher during summer months and festive seasons (e.g. Easter, Thanksgiving, Christmas) allowing the industry to enjoy higher load factors (Dempsey, 2008). Internationally, the strongest months for leisure travel are July, August and September. On the other hand, January, February, and December are internationally the weakest months for air traffic (Dempsey, 2008). This also explains why the load factor for the global aviation industry reached a yearly high in August 2013 (83.4%) as air traffic is usually up to 10-20% higher than in the low season (Dempsey, 2008).

In economic terms, the air traffic demand is highly dependent on the economic performance of a country and strongly correlating with personal disposable income and GDP. In a prospering economy with strong consumer confidence, the demand for air transport grows exponentially improving the load factor and allowing airlines to raise yields and profitability (Dempsey, 2008). In times of recession, however, unemployment levels increase and the purchase of luxury items or leisure travel declines resulting in lower load factors, yields and profitability for the airline industry (Dempsey, 2008).

3.3.3 Costs and Pricing

The overall costs of an airline consist of various components including food and beverages, insurance, passenger commissions, communication, promotional advertisement, etc. However, the biggest part of the fixed costs constitute of labour, fuel and capital investments

as displayed in Figure 3.2 below (Dempsey, 2008; Lockan, 2013).

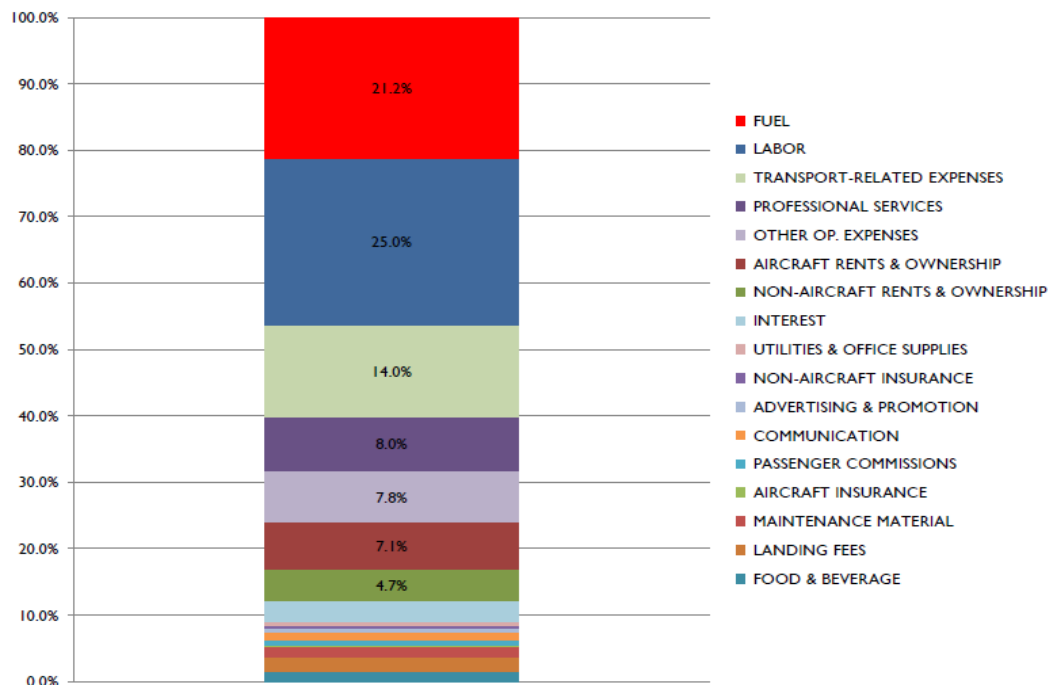


Figure 3.2. Cost breakdown by category

Source: Lockan, 2013

Airlines are still highly labour intensive. Although more and more processes can be automated in form of self-check in or online bookings, there does remain a portion where direct and personal customer service is required and thus airlines employ an armada of pilots, flight attendants, mechanics, baggage handlers, check-in personnel, gate agents, security guards, cleaners, cooks, managers, accountants, lawyers, etc. With that, labour costs per employee are amongst the highest compared to any other industry and comprise a major part of the fixed costs. Approximately one quarter of the airline revenue is spent to pay its workforce (Dempsey, 2008; Lockan, 2013)

However, airlines are not only fuel and labour intensive, but also very capital intensive as they need an enormous range of expensive equipment and facilities to run operations. High maintenance costs in form of servicing, overhaul, and replacement are creating tremendous fixed costs that take up almost 15% of annual revenue on capital equipment – double the average amount for manufacturing companies (Dempsey, 2008).

The combination of high fixed costs, rising consumer demand for frequent flight schedules, air travel being substitutable, and the desire of airlines to sell their abundant inventory, leads to increased price pressure to levels that fail to fully cover allocated costs (Dempsey, 2008; Pearce, 2013).

The dilemma arises out of the fact, that airlines create excess capacity where empty seats equal lost revenues which can lead to bankruptcy in the long run if portions of the fixed costs are not recovered. Therefore, airlines are trying to fill their seats by offering lower air fares to customers as the incremental cost of adding a passenger to a scheduled flight is almost nil. However, if one airline lowers prices due to rational economic decision-making, competitors in the market have to follow and are faced with the so-called Hobson's choice: either the airline meets the lower fares of the competitor although allocated costs are not fully covered, or it holds its prices firm running the risk to lose out even more revenue by attracting too little customers. In the end, selling a ticket price below the break-even point might be unprofitable in the long term, but any tickets sold make a small contribution towards the fixed costs while an empty seat makes absolutely no contribution (Dempsey, 2008).

3.3.4 Substitution and Commoditisation

Although air travel has been considered a favourable way of travelling some 75 years ago regarding speed and convenience, the technological development in the transportation industry has created viable and attractive alternatives for business and leisure travelers to reach their destination by a number of different modes of transport. Especially high speed rails and buses are substitutes for the time-consuming and increasingly complex air travel and now in direct competition with airlines (Peterson, 2010; Pearce, 2013).

Increased security procedures at airports and more complex booking and boarding processes make flying a time-intensive undertaking which can be easily subsidized by faster point-to-point solutions over short-to-moderate distances (e.g. high speed rails) at a lower cost. The factors of reliability, costs and convenience determine the consumer choices to a large extent and make the competing alternatives viable (Peterson, 2010).

Additionally, companies are usually interested in cost savings and look further into technological alternatives in order to minimize duty travel and decrease point-to-point contact by subsidizing business meetings and workshops with telepresence or video conferencing (Peterson, 2010; Pearce, 2013).

Besides substitution, commoditisation resembles a big problem in the aviation industry as airlines, in the past, have failed to develop distinct business strategies that create a competitive advantage over other airlines. For that reason, airlines have failed to sufficiently differentiate their products so that consumers are indifferent over what product to choose as they are unwilling to pay for the little differences they perceive (Peterson, 2010; Pearce 2013).

3.3.5 Other factors influencing economic performance

Besides cost and demand factors, substitution and supply, the airline industry is also dependent on other economic and non-economic factors that impact on the profitability and efficiency levels of an airline. For example, the industry remains highly regulated and taxed by governmental institutions that not only control the infrastructure (including airports and air traffic control) but also contribute towards technological innovations in form of research and development. Technological breakthroughs by airframe or engine manufacturers can also have a profound impact not only on the profitability of an airline but also on productivity and efficiency levels (Dempsey, 2008). Furthermore, natural disasters like Iceland's ash cloud rendering the airspace in 2010 or terrorist attacks like in 9/11 have a crucial impact on the airline and tourism industry. According to the IATA website (2013), the Iceland volcano eruption in April 2010 led to the closure of the majority of European airspace for 6 days resulting in an estimated loss of revenue at \$1.8 billion for airlines. Some 10 million passengers and approximately 100,000 flights were affected during that period. The aftermath of the 9/11 terrorist attacks have been even worse resulting in a 22 billion revenue loss for the airline industry worldwide and a sharp decline in passenger demand for air travel. The industry only recovers slowly from the events struggling to remain viable throughout the first decade of the millennium (Peterson, 2010).

3.4 Situational analysis of the airline industry using Porter's five forces model

In order to gain a deeper insight into the situational analysis of the airline industry, Porter's five forces framework, which is used for strategic industry analysis, will be utilized in the upcoming paragraphs to describe and explain the competitive structure of the airline industry that also impacts and shapes profit potentials.

Porter published his five forces framework (figure 3.3) in 1979 which, since then, gained great popularity in the business world and became a central concept to business theory (Wilkinson, 2013). It analyses the competitive environment in which a certain business

operates and does not only consider the direct competition but also other factors that have a strong influence on the performance of a business in that industry (Thompson & Martin, 2010; Ehlers & Lazenby, 2010). The framework includes the bargaining power of buyers, the bargaining power of suppliers, the threat of new entrants, and the threat of substitute products. Some of the aspects (such as substitution and competition) have already been covered in section 3.3 and will appear again in Porter's five forces framework. The model helps to determine whether an industry is attractive or unattractive from a business point of view by looking at the intensity of the various forces. Generally it can be said that if the forces are strong, they increase competition; if the forces are weak they decrease competition (Thompson & Martin, 2010; Ehlers & Lazenby, 2010; Wilkinson, 2013). However, the outcome does not necessarily have to be straightforward as some forces can be strong decreasing profit potentials while other factors are weak increasing the profit potential. Therefore, the interpretation depends on the particular business and the particular industry and conflicts eventually arise (Wilkinson, 2013).

According to Porter's framework, the following characteristics apply for an attractive and unattractive business, respectively. In an attractive industry the threat of new entrants is low, the bargaining power of suppliers and buyers is weak, the threat of substitution is low and there is little existing rivalry among industry competitors. In that case, one can assume that the industry has profit potential and the risk of entering the market is rather low. In an unattractive industry the threat of new entrants is high, both bargaining power of buyers and suppliers is strong, the threat of substitute products is high and there is strong rivalry among industry competitors. In that case, the industry is regarded as volatile with little or no profit potential (Thompson & Martin, 2010; Ehlers & Lazenby, 2010 and Wilkinson, 2013).

Usually, companies use Porter's framework in order to determine whether there are profit potentials in a particular industry and if it is worthwhile to enter it despite existing competitive forces. In the case of this research, the airlines are already established in the airline industry and can only use Porter's framework to determine their optimal position within the marketplace (Wilkinson, 2013).

3.4.1 Threat of new entrants

The threat of new entrants is regarded as high as it is relatively easy for a new airline to secure second hand aircrafts and establish a budget airline. Aircraft maintenance, food services, ground services, reservations, etc. could be outsourced to third party providers and

aircrafts could be leased in order to minimize the initial capital investments (Sundaresan, n.d.). However, the amount of money needed to establish a new airline is still considerable and includes certain financial risks and borrowing. Furthermore, securing airport infrastructure, facilities, and airline routes is difficult because of high government regulatory barriers which create additional limitations to entering the airline industry (Pearce, 2013).

3.4.2 Bargaining power of suppliers

The airline industry is mainly dependent on three factors – airplanes, fuel, and labour.

The providers of the airplanes have a **high** bargaining power since today only two manufacturers (Boeing and Airbus) keep satisfying the average requirements of all commercial airline companies (Sundaresan, n.d.; Pearce, 2013).

Aviation fuel is a commodity and its prices are determined by market forces and geo-political factors. Since airplanes cannot fly without kerosene, the few suppliers of aviation fuel have a high bargaining power as well since airlines are usually not in the position to bargain for lower fuel prices (Sundaresan, n.d.).

The third factor, consisting of labour, has also some bargaining power as pilots, cabin crew, ground personnel, gate agents, etc. are often heavily unionised and can negotiate for steadily increasing labour costs (Sundaresan, n.d.; Porter, 2011; Pearce, 2013).

3.4.3 Bargaining power of buyers

The bargaining power of buyers is **high** since air passengers have a large variety of airlines to choose from and shop for the best ticket prices online. Since it is very difficult for customers to differentiate the products on the market and no real competitive advantage is perceived from one airline over another, buyers can easily switch between airlines without having high switching costs and increase competition over ticket prices (Peterson, 2010; Porter, 2011; Pearce, 2013; Sundaresan, n.d.).

3.4.4 Threat of substitute products

Especially over short-and moderate distances, there are a number of substitute transport modes that clearly threaten the airline industry and are now considered direct competition for short-haul flights. Driving, high speed rails and buses become a suitable alternative for the more and more time-consuming air travel and businesses are also investing in better technology to minimize travelling altogether. Substitutes such as video-conferencing or

telecommunication are gaining popularity and remote virtual collaboration is becoming a cost-effective alternative to air travel (Peterson, 2010; Porter, 2011; Pearce, 2013; Sundaresan, n.d.). However, for long distance travel, airlines have still the advantage of high speed transportation, convenient travel opportunities and high levels of flexibility. Due to those reasons, the threat of substitute products is regarded as a **medium to rising** threat.

3.4.5 Intensity of rivalry among competitors

While in the pre-deregulation days, airlines mostly competed on things like service, quality of meals and in-flight service while prices have been regulated by the Civil Aeronautics Board, the post-deregulation era has changed the picture completely and nowadays the level of rivalry among different airlines is **intense**. Today, it is a pure price competition by airlines undercutting each other in order to achieve the lowest air fare promotion (Airlines for America, Chapter 2 1995-2013; Porter, 2011; Pearce, 2013; Sundaresan, n.d.). Since the product offerings are rather homogeneous, switching costs for buyers are low and prices become the determining factor for choosing an airline (Pearce, 2013).

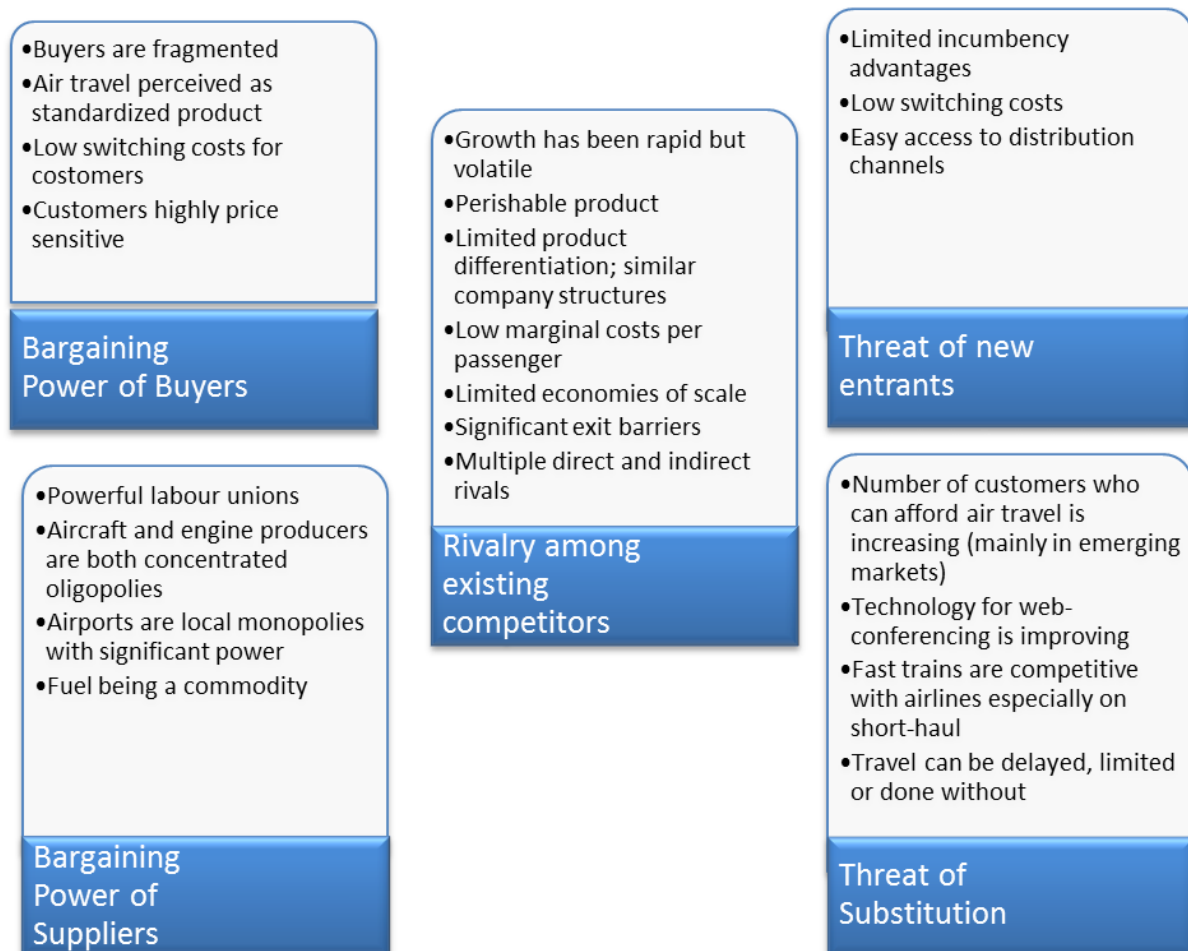


Figure 3.3. Airline Industry Analysis
Source: International Air Transport Association, 2011; Pearce, 2013

3.4.7 Evaluation of Porter's Framework

Considering Porter's five forces analysis for the airline industry, it can be concluded that the industry is highly unattractive for prospective investors as all competitive factors are ranking from medium to high leaving little room for profit potentials. According to Michael Porter (2011) there exist only a few industries where the "5-forces" are as strong as in the airline industry (Pearce, 2013). With that, the aviation industry can be rated as highly volatile and competitive where a new thinking of existing airlines is required in order to achieve returns of invested capital (ROIC) that are considered "normal" among investors. The airline industry

generated an average return on invested capital of 4.1% in the 2004-2011 business cycle which is a small improvement compared to the last cycle (3.8%) but still way below the weighted average cost of capital (WACC), which falls in a range of 7%-9% (CAPA, 2012).

In 2013, the industry produced a combined net post-tax profit margin of 1.6% which equals a net post-tax profit of about \$10.6 billion (IATA, 2013).

3.5 Future outlook for the airline industry

According to the work of Helen Jiang and R. John Hansman (2006), the airline industry can be clustered in cycle periods of profitability that determine the financial dynamics of that industry and repeat themselves regularly in clearly defined time frames. Jiang and Hansman (2006) have found that the fundamental cycle period for the world airline industry is 10.5 years and that neither deregulation nor September 11 has significantly changed the cycle length. The cycle for the world airline industry was established by analysing and evaluating all airline profit data between 1978 and 2002 which shows a cyclical pattern (Jiang & Hansman, 2006). According to the results from the study, the world airline industry had the most recent profitability peak in 2008 followed by a sharp decline in net profit incomes in the following years. If the proposition by Jiang and Hansman holds true and profit cycles repeat in a 10 year period, the next peak for the world airline industry could be expected in 2018. However, it is important to note that empirical models based on historical data are limited in making future predictions as they fail to consider possible future constraints such as limited industry growth, reduced capital investments due to financial losses during the down cycle or changing consumer demands (Jiang & Hansman, 2006 and Porter, 2011).

However, assuming that the above observations and profitability cycles hold true, the global aviation industry currently resides in an upward slope which is also predicted by McDonald (2014) who states that “airlines can look forward to a better year in 2014” as passenger numbers are rising and airline profits are increasing by 53% compared to 2013. According to IATA chief executive Tony Tyler (2013) “We are approaching a point where this industry will move half the world’s population from one place to another over the course of a year” and where the global profit outlook is “increasing to \$19.7 billion” (McDonald, 2014). Thus, the overall trend is mostly positive and industry specialists predict a generally optimistic future (Porter, 2011; Pearce, 2013).

In order to keep the upward trend and attract the necessary \$4-5 trillion of new capital over the next two decades to be able to expand aircraft fleets according to the rising demand of

the Asia-Pacific and other emerging regions, re-thinking of existing airlines and new processes are inevitable (Tyler, 2013). It will become most important to improve the efficiency of the existing capital and generate reasonable returns for its investors. This becomes a prerequisite for attracting new potential investors from the private sector (Pearce, 2013).

For that purpose, airlines have to restructure their business concepts and motivate for effective partnerships between airlines and all their suppliers, adopt new technologies to further cut costs and increase fuel efficiencies, and negotiate better regulations for airlines with governments around the world (Pearce, 2013 and McDonald, 2014).

Although airlines are in the process of improving and changing the industry structure over the last three decades, positive outcomes will only be visible in the far future as the changes are not strong and rapid enough to have an immediate impact on profitability (International Air Transport Association, 2011).

3.6 Conclusion

According to Porter's five forces framework and analyses, the airline industry is one of the most volatile industries in the world that leaves little room for any profit potentials and in which investors struggle to achieve a sufficient return of investment. Furthermore, the high levels of competition among existing airlines and the lack of differentiated strategies contribute to the unattractiveness of the market and the extreme volatile business environment. Airlines barely manage to cover their operating costs caused by relentless cost pressure, high fixed and maintenance costs and constantly rising fuel prices. The economic and non-economic factors mentioned in section 3.3 explain the underlying causes for the prevailing volatility of the industry which can only be improved by a new way of thinking from existing airlines and the willingness to restructure business models and persisting industry structures (Dempsey, 2008; Peterson, 2010; Porter, 2011; Pearce, 2013; Tyler, 2013). From that perspective, it is suggested that the volatile environment not only requires new industry structures and procedures but also triggers a new form of leadership that is able to manage the combined challenges of such volatile forces. With that, the chapter was able to provide answers to the secondary research objective which required the determination of main features of a volatile environment.

Chapter 4: Research Methodology

4.1 Introduction

This chapter sought to develop a suitable research methodology to validate the research hypothesis that a new form of leadership is emerging through triggers of a volatile environment and to provide answers to the secondary objectives of this dissertation. For that purpose, this chapter describes the research approach and processes involved and determines whether the chosen approach was relevant.

4.2 Research objectives

The discovery of quantum physics at the beginning of the 20th century did not only revolutionise the scientific world but also interfered with the classical (Newtonian-Cartesian) concepts of management science. By applying quantum theories to businesses and questioning the applicability of classic approaches to leadership and organisational design, organisations of the 21st century are at the verge of reaching a new cycle of business paradigm which is not only triggered by ground-breaking scientific findings but also increasing complexities in the environment. Therefore, the primary and secondary objectives of this dissertation are articulated below.

The primary objective of the research is to explore the evolution and existence of a new form of leadership paradigm, different from the Newtonian leadership paradigm, triggered by the emergence of increasingly volatile environments as described in section 1.1. Based on the primary objective, the research seeks to achieve the following empirical research objectives:

1. To determine the characteristics of a Newtonian-Cartesian leadership style.

The evolution of management theories and paradigms since the beginning of the 19th century will be analysed and evaluated to establish key characteristics of a Newtonian-Cartesian leadership style.

2. To determine the characteristics of an Einsteinian-Quantum leadership style.

The ideal features of the future quantum organisation and quantum leadership style will be identified and listed.

3. To determine the features of a volatile environment in the 21st century.

A situational analysis of the international airline industry will be conducted by applying

Porter's Five Forces analysis.

4. To establish the link between successful leadership styles within a volatile industry and a quantum world-view.

The status quo of leadership behaviour in the international airline industry will be analysed and evaluated in order to establish the extent to which a new form of leadership paradigm is emerging triggered by a volatile environment.

The secondary research objectives will be addressed by the selected research methodology in order to answer the primary objective in a subsequent chapter.

4.2.1 Research process

The research process describes the division of this dissertation into manageable elements. For that purpose, the research has been split into two distinct phases. Phase 1 has a descriptive theory approach to establish key features of Newtonian-Cartesian and Quantum leadership traits as well as the characteristics of a volatile environment. A gap analysis was undertaken in the literature review in chapter 2 (section 2.5) in order to show the differences between the leadership styles and establish a link between leadership characteristics and successful organisations within a volatile environment. Phase 2 has a normative theory approach to quantifying and qualifying the outcomes of the gap analysis performed in Phase 1.

4.2.2 Phase 1: Descriptive theory

This phase covered the literature review chapters (Chapters 2 and 3) where scientific and objective information will be categorised and consolidated into a gap analysis of the different leadership styles and qualitative assumptions were made with the help of content analysis. Through observing, classifying and defining relationships between leadership characteristics, a link between successful leadership traits and volatile environments could be drawn. The aim of the descriptive theory phase was to understand, define and suggest ideas to the interdependency of leadership characteristics and the successfulness of organisations in volatile environments.

4.2.3 Phase 2: Normative theory

This phase covered the verification of existing leadership traits within a volatile environment

and includes the triangulated research methodology where key players of the airline industry were interviewed, observed or surveyed and a Quantum Leadership Survey (QLS) was derived (Chapter 4). In this chapter, managers and leaders were interviewed or surveyed in terms of their prevailing leadership styles, their subjective opinions on what characteristics are required to cope with the changing environment and their role in leading the organisation successfully. In Chapter 5 the different qualitative and quantitative information from Chapters 2 to 4 were subsequently analysed, evaluated and tested for validity. Furthermore, deductive findings were discussed as the research attempts to find relations, from the data and information gathered, between quantum-like leadership traits and successful organisations in a volatile environment. Through triangulation of quantitative and qualitative analysis a better research reliability was achieved and suggestions were based on a greater variety of information.

4.3 Research paradigm

According to Kuhn (1962), a paradigm is essentially a worldview within a framework of values, beliefs and methods, which serves as a pattern or model from which one forms opinions and make decisions and in which research takes place. As researchers have different beliefs and ways of interacting with their surroundings, the way in which research studies are conducted, varies too. However, there exist certain standards and research methods that guide a researcher's actions and provide a framework for choosing a methodological research approach. In this research, use is made of a mixed-methods approach of qualitative and quantitative research techniques in order to reach higher reliability in terms of suggested outcomes and to display a greater variety of information supporting the research topic (Creswell, 2003). Through triangulation of quantitative and qualitative analysis, the research took a holistic approach.

4.4 Research design

4.4.1 Research Approach

As this research was focused on understanding organisational leadership behaviour within the context of a volatile industry and establishing key aspects of a volatile environment, the research design applied a multi-disciplinary and multi-level approach. Moreover, since the research was inspired by the ideas of quantum physics and used it as metaphor in exploring quantum-specific leadership characteristics, the research design took a similar holistic approach and combined various research theories and methodologies to achieve the research outcomes. Therefore different theories, methodologies and frameworks were

synthesised to provide triangulation and enhance the overall research quality.

4.4.2 Research Methodology

The research methodology applied consisted of a mix of qualitative and quantitative research techniques. There are three approaches to mixed methods research designs. These are exploratory, explanatory and triangulation (Creswell, 2003). This research will follow a mixed method triangulation research design where the outcomes of the qualitative phase (interviews) and the quantitative phase (survey questionnaire) were integrated in order to establish the elements of a new approach to leadership based on a volatile environment (see figure 4.1 below).

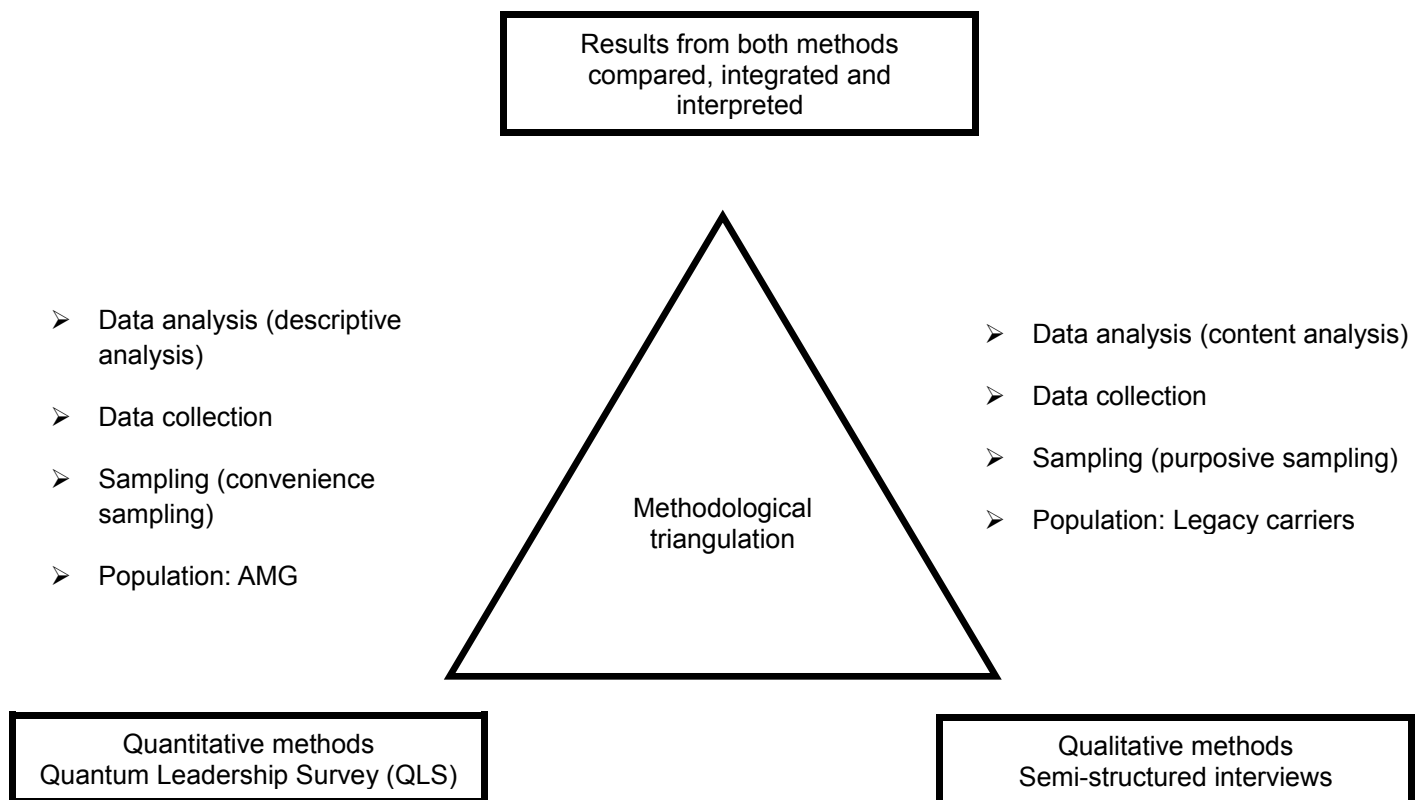


Figure 4.1. Combination of qualitative and quantitative research methods in a triangulated approach

4.4.2.1 Qualitative Research – exploratory phase

According to Creswell (2007, p.37), 'Qualitative research begins with assumptions, a worldview, the possible use of a theoretical lens, and the study of research problems

inquiring into the meaning individuals or groups ascribe to a social or human problem.' Qualitative research is rather subjective in nature and focuses on the collection, analysis, and interpretation of data by observing people in their natural environment and drawing conclusions according to the meanings, concepts, definitions, characteristics, symbols, and descriptions of things. The nature of the research is exploratory and open-ended and information has to be obtained through mainly individual, in-depth interviews and focus groups (Anderson, 2006). The results of qualitative research include the voices of participants, the reflexivity of the researcher, as well as a complex description and interpretation of the problem in which holistic assumptions can be drawn and multiple perspectives are taken into consideration (Creswell, 2007). An exploratory design is most suitable when there is little empirical knowledge about a particular research area, that is, when there is no theoretical framework, instruments, or variables (Creswell, 2007).

In this research, semi-structured interviews were conducted with selected participants from the airline industry to gain deeper insights into the complexity of the research problem and gather more detailed data in terms of the worldview and actual leadership behaviour of the selected individuals.

4.4.2.2 Quantitative Research – explanatory phase

In a quantitative research approach, the focus lies on the measurement of objective and statistically valid information that is usually gathered from a relatively large sample size or can be found in the form of already existing numerical data. Quantitative research seeks explanatory laws by establishing relationships and focusing on value-free and unbiased facts (Anderson, 2006). According to Cohen and Manion (1980), quantitative research is defined as social research that employs empirical methods and empirical statements. Typical measurement instruments for a quantitative approach include survey and correlation research, hypothesis testing, and structured interviews that are analysed by using mathematically based methods (Tustin, Lighthelm, Martins & Van Wyk, 2005). An explanatory design is used when qualitative data is needed to expand or explain initial quantitative findings (Creswell, 2007).

In this research, a specifically designed survey (referred to as QLS) was utilised to study the research constructs under investigation and draw statistical and unbiased conclusions on the answers provided based on the research objectives.

4.4.2.3 Triangulation

The use of multiple methods in researching a research problem in social science is often referred to as triangulation. The concept of triangulation entails that qualitative and quantitative methods are viewed as complementary instead of clashing and that triangulation offers the prospect of enhanced research confidence (Jick, 1979; Bryman, 2001). While single research methods are subject to certain limitations, a mixed method approach can improve the accuracy of social research by collecting different kinds of data relating to the same phenomenon and validate the credibility of the results (Jick, 1979). If the various methods together produce largely consistent and convergent results, the uncertainty of its interpretation can be greatly reduced (Bryman, 2001).

In this research, existing leadership behaviours and worldviews in the international airline industry will be studied by interviewing selected individuals, observing their behaviour and conducting surveys among other airline leaders worldwide. Therefore, the mode of data collection varies and if the chosen methods draw similar conclusions, a more certain portrayal of the existing leadership paradigm can be provided in this dissertation.

Table 4.1. outlines the prevalent research methods and approaches by summarising their major characteristics according to Creswell (2003).

Table 4.1. Quantitative, Qualitative, and Mixed Method Procedures and Approaches

Quantitative Research Methods	Qualitative Research Methods	Mixed Methods Research Methods
Predetermined approaches; reductionist: identifying a set of variables to focus the study on	Emerging methods; holistic: seeking to understand the situation in its totality	Both predetermined and emerging methods
Instrument-based questions	Open-ended questions	Both open-and closed-ended questions
Performance data/numeric data	Interview data	Multiple forms of data drawing on all possibilities
Attitude data	Observation data	Statistical and text analysis
Positivist	Anti-positivist	
Statistical analysis	Audio-visual data	
Scientific: the situation is manipulated like in experimental quantitative research	Phenomenological: focuses on social phenomena as they occur naturally; situations are not manipulated	Mixed-method design
Descriptive: Tests or verifies	Experimental: Field	Closed-ended measures, open-

theories of explanations; researcher is interested in process, meaning, and understanding gained through words and pictures	observations/open-ended interviewing; use of experiments to investigate behaviour	ended observations
Uses standards of validity and reliability	Focuses on a single concept	Integrates the data of the different stages of inquiry
Uses unbiased approaches	Brings personal values into the study; subjective: concerned with opinions, experiences, and feelings of individuals which produces subjective data	Employs the practices of both qualitative and quantitative research
Deductive: Employs statistical procedures and tests theories which have already been proposed	Inductive: Makes interpretations of the data and uses data to develop concepts and theories that assist in understanding the social world	

Source: Adapted and combined from Creswell, 2003 (p.17, p.19, p.20)

In this research the triangulation allowed for statistical and text analyses integrating data from the different enquiry modes.

4.4.3 Research population and sample

According to Tustin, et al. (2005, p. 337-339), a population is the complete set of elements (persons or objects) that possesses some common characteristic defined by the sampling criteria established by the researcher and form a total group of people or entities from whom information is required. A sample is defined as a subset of a population (or universe) in which selected elements (people or objects) are chosen for the participation in a study.

In the case of this research, the population is comprised of all airline managers in the international airline industry. In Table 1.1 (Chapter 1), most important international airlines and their different characteristics were identified but due to the large number of airline companies worldwide, not all of them could be sampled in this research. Due to the large size of the overall population, the research is not able to account for the entire census and the research will be conducted with a sample population, instead. The target group in the sample population consists of airline managers in leading management positions.

4.4.4 Sampling methods

As a step in the sample plan design, the researcher has to select the appropriate sampling method which consists of either a probability or a non-probability sampling approach. Either method determines how each member or entity will be selected (Tustin, et al., 2005). In probability sampling, each member of the population has a known, non-zero probability of being included in the sample and the selection of members of the population is random. In non-probability sampling, members or units of a population are not selected randomly. Especially in social research, there are circumstances where it is not feasible or practical to exercise random sampling. In such cases, the researcher can consider a wide range of non-probabilistic alternatives (Tustin, et al., 2005).

Table 4.2. depicts the main sampling methods in probability and non-probability sampling and their respective characteristics.

Table 4.2. Probability and non-probability sampling methods

Sampling methods	Sampling techniques	Characteristics
Probability sampling	Systematic sampling	Sample members are chosen at regular intervals; this technique requires the computation of a sampling interval N/n
	Simple random sampling	Sample members are chosen randomly for inclusion in the sample; each population unit has an equal probability of being selected
	Stratified sampling	Stratified sampling separates the population into different subgroups (strata); then random samples are selected from each subgroup
	Multistage sampling	The final sample members are chosen by means of one of the other probability methods, but a number of stages precedes the final selection
	Cluster sampling	Cluster sampling divides the population into clusters, each of which represents the entire population; then a sample of clusters is drawn
Non-probability sampling	Judgemental sampling	Members are chosen on the basis of the researcher's judgement on what constitutes a representative sample of the population of interest
	Purposive sampling	Sample members are chosen with a specific purpose/objective in mind; the sample is intentionally selected to be non-representative
	Multiplicity (snowball)	Sample members are originally selected

	sampling	either judgementally or through probability sampling and are then asked to identify others with the desired characteristics; the final sample frame is constructed from the referrals provided by the initial respondents
	Quota sampling	Sample members are chosen on the basis of satisfying pre-specified criteria thought to apply to the population
	Convenience sampling	Sample members are chosen on the basis of being readily available/accessible

Source: Tustin, et al., 2005, p.344-358

4.4.4.1 Selected sampling methodology

As mentioned before, the research employed a mixed method approach and combined qualitative and quantitative research in order to draw holistic conclusions on the research topic. For the qualitative approach, semi-structured interviews with a relatively small sample size based on non-probability sampling were conducted. For that purpose, purposive sampling was used in which sample members were chosen on the basis of their specialist knowledge on which deep and rich information could be obtained. Due to the particularly complex and volatile nature of legacy carriers (e.g. high number of interstate routes, high level of services, mergers and alliances, extensive fleets and heavy unionisation), the qualitative sample consisted of leadership from this category (refer to Table 1.1.) covering three different levels of management including senior/executive, middle as well as lower management.

For the quantitative research method, a non-probability approach in the form of convenience sampling was applied. The participants were selected based on their availability and accessibility (Tustin, et al., 2005). The Quantum Leadership Survey (QLS) was published on www.linkedin.com in the Airline Managers Group (AMG) with a current total of 17,246 individuals of which 13,106 members have substantial management experience and hold leading positions. Due to the fact that this group provided a large base of dedicated leadership individuals in the airline industry, this was selected as the sample frame based on their excellent knowledge about the international airline industry and the complexities it faces. Those members that were classified as managers are divided into three subgroups that ranged from senior/executive levels to middle and lower (entry level) management. The group was established on the 28th of April 2008 with the purpose of linking senior

management in the aviation industry and has grown steadily since then.

Table 4.3. Sample population subgroups

Management levels	Total
Senior/Executive management	N1 = 6,174
Middle management	N2 = 5,120
Lower management (entry level)	N3 = 1,839
Total	N = 13,106

Source: Airline Manager Group (AMG) on www.linkedin.com, viewed 17 November 2014

4.4.5 Chosen research methodology and individual approaches

Table 4.4. provides a summary of the selected research methods and their individual approaches throughout the dissertation.

Table 4.4. Mixed Research methodology

	Qualitative Research	Quantitative Research
Tools	Interviews, text reviews	Survey in form of questionnaire
Design	Semi-structured with open-ended questions	Mix of closed –and open-ended questions
Population	Legacy carriers in the international airline industry	Members of the Airline Manager Group (AMG)
Sample size	7	13,106 (17 November 2014)
Sampling method	Non-probability, purposive sampling	Non-probability, convenience sampling

4.5 Definition and characteristics of a ‘good’ research methodology

As with the definition of leadership, there seems to be no real consensus among specialists on a clear definition of what research entails and the ideas and suggestions vary from researcher to researcher (Coryn, 2006; Hall, 2008). However, common usage holds that research consists of the following;

- Research is the systematic process of collecting and analysing information to increase the understanding of the phenomenon under study;
- Research is a truth-seeking activity which contributes to knowledge; and
- Research is aimed at describing or explaining the world, conducted and governed by those with a high level of proficiency or expertise.

With the purpose of research, comes certain criteria that distinguish the various research types and clearly define what constitutes a ‘good’ research.

In terms of scientific research Denscombe (2002) mentions that there are ten characteristics outstanding for high research quality (adopted from Sedgley, 2007). They are described as:

1. Clarity of Purpose:
 - a. The purpose of the research should be stated clearly and explicitly.
2. Relevance:
 - a. Contributing to existing knowledge;
 - b. Addressing real problems or issues; and
 - c. Relevance to contemporary concerns.
3. Manageable research:
 - a. Sufficient time has to be allowed for various research activities including literature review, data gathering, interviewing, and data analysis.
4. Originality:
 - a. Research should be set out purposefully into direction of new territory in order to reach new conclusions to old research or look at existing problems in a new way.
5. Accuracy:
 - a. Research should produce valid data using reliable methods; and
 - b. Limitations to accuracy need to be stated in the research report.
6. Credibility:
 - a. Research should include a full and detailed account of its methodology; and
 - b. Enable the readers to evaluate the research by providing details of the methods of data collection, justification of approach taken, presentation of boundaries and limitations of methods used.
7. Applicability:
 - a. Research should produce findings and conclusions that can apply to similar situations; and
 - b. Generalization of research findings and conclusions.
8. Objectivity:
 - a. Although research is always subjective, researchers should aim for objectivity and be as open-minded as possible towards the research outcome; and
 - b. High level of self-awareness of the researcher to present objective conclusions and acknowledge opposing ideas.
9. Ethical approaches:
 - a. Respecting privacy rights of individuals;

- b. Voluntary nature of participation; consent of participants;
- c. Maintenance of confidentiality of data provided by individuals; and
- d. Behaviour and objectivity of the researcher.

10. Caution:

- a. Research rather “suggests” a particular conclusion instead of “proving” hard facts;
- b. Being cautious about making cause-effect claims; and
- c. Eliminate factors that are chance or coincidence related.

Throughout this dissertation, the above-mentioned characteristics are intended to be used in order to formulate a solid research methodology that is consistent with the objectives and purpose of this research.

4.6 Derivation of the Quantum Leadership Survey (QLS)

To add quantitative data to the observations and semi-structured interviews facilitated throughout this dissertation, a Quantum Leadership Survey (QLS) in the form of a questionnaire will be derived and administered across selected key players of the chosen industry to further validate the research outcome.

4.6.1 The questionnaire as a measurement tool (quantitative)

Research methods intending to collect information about people such as feelings, world-views, beliefs and attitudes are generally classified as self-report methods and usually come in form of structured interviews, questionnaires, and rating scales. Self-report techniques are especially useful in obtaining phenomenological data (e.g. self-perception, belief system, etc.) by studying behaviours that are difficult to observe because they are either too subjective in nature or too personal or private (Barker, Pistrang & Elliott, 2005; Hall, 2008).

However, self-report methods also come with certain disadvantages. The major weakness of self-reporting is the potential validity problem associated with it. As the data is personal, the researcher must factor in that the respondent is not always truthful or has a very unique perception of one-self that does not necessarily reflect the reality seen by others. Furthermore, respondents are not always able to provide the requested level of detail, or use the concepts the researcher is interested in (Barker, et al., 2005). The discrepancy between the actual behaviour and what is reported in the questionnaire cannot be controlled for. Thus, the questionnaire should not be used as individual measurement instrument, but as a cumulative measure to provide direction in the research (Hall, 2008).

Taking the above-mentioned advantages and limitations of self-report methods into consideration, the main data collection instrument of choice for this dissertation will be a questionnaire to support the quantitative research findings and gain deeper insights into personal worldviews and perceptions. Due to the nature of the data being spread internationally, the usage of semi-structured interviews will be rather difficult to obtain but is still anticipated for this research with voluntary participants from the airline industry to add substance to the questionnaire results.

In order to ensure that the questionnaire is easily understood by the participants and questions are not misleading or confusing, the questionnaire will be broken down into subsections representing different topics. The overall goal, as a whole, will be to capture all the concepts required to answer the research questions and draw conclusions regarding the research problem.

4.6.2 Purpose of a questionnaire

According to the business dictionary, a questionnaire is a specifically designed research tool that consists of research or survey questions that are asked to respondents in order to obtain specific information and opinions on a research topic. It is non-experimental and opinion-based providing answers to descriptive characteristics of non-observable phenomena including perceptions, attitudes, behaviours and beliefs (Hall, 2008). A questionnaire serves mainly four purposes:

1. To collect the appropriate data;
2. To make data comparable and amenable to analysis;
3. To minimize bias in formulating and asking questions; and
4. To make questions engaging and varied.

4.6.3 Qualities of a good questionnaire

A good questionnaire usually starts off with easy and non-threatening questions that all respondents can answer effortlessly and that help to establish rapport with the participants. Demographic questions (such as age, sex, occupation, etc.) are usually placed at the end of the questionnaire, as it is recommended to start with questions relevant to the topic as respondents prove to be more open towards the topic before providing their personal details (Barker, et al., 2005).

The questions themselves should be phrased in a specific, brief, and neutral manner as they

can determine the kind of response that is given by the respondents and eventually influence the research outcome. Therefore, questions should not suggest any answer (in form of leading questions) or include assumptions (implicit premises) nor should they leave room for ambiguities or contain multiple clauses (Barker, et al., 2005; Hall, 2008).

4.6.4 Questionnaire distribution and control

The final questionnaire will be sent out to selected respondents within the sample group via e-mail in order to ensure data security and trustworthiness. The questionnaire will be sent directly to the participants for completion and the completed document will be sent directly back to the researcher. By following such procedure, the security of information is sufficiently controlled. Furthermore, the questionnaire will be completely anonymous for the participants in order to reduce social desirability bias and avoid social pressure.

4.6.5 Development of the questionnaire

The questionnaire is constructed in such a way that the construct is aligned with the qualities of a 'good' research and the content is associated with the outlined quantum behaviours identified during the gap analysis. Therefore, the questionnaire is divided into six sub-sections that intend to find answers regarding paradigms, organisational design, culture and values, response patterns to change, as well as leadership skills and styles.

Questions will be scored according to a Likert-scale (refer to section 4.7.6) as it is regarded a prominent tool to measure attitudes (Hall, 2008). As the reliability increases with more points, but shows diminishing returns beyond five points, the questionnaire is making use of a five –point scale to achieve higher reliability of results (Barker, et al., 2005).

- Strongly Disagree = 1
- Disagree = 2
- Neither disagree nor agree = 3
- Agree = 4
- Strongly Agree = 5

By providing one answer set per question, the questionnaire is constructed to research the current state of organisational leadership and determine the tendencies either towards a Newtonian-Cartesian paradigm or anticipated Einsteinian-Quantum leadership paradigm.

Full instructions on how to complete the questionnaire are provided on the cover page attached to each questionnaire and a short explanation of each sub-section is given before each new set of related questions.

The questionnaire results will be entered into a separate spread sheet exclusively designed for that purpose where the scorings and weightings of each question can be compared among all participants and conclusions can be drawn.

Additionally, the questionnaire is designed in such a way that it contains balanced questions to not point the participants into a certain direction. With the help of control questions, the questionnaire avoids biased answer possibilities and ensures objectivity. The different scoring of the control questions is considered in the spread sheet where data is collected and analysed.

4.6.6 Likert Scale

As already mentioned in section 4.6.5, the answer possibilities in the questionnaire are designed in form of a 5-point Likert-scale. Named and developed by organisational psychologist Rensis Likert, the Likert-scale is a type of psychometric scale often used in psychology in order to find out about attitudes, opinions, feelings and beliefs (Hall, 2008; Vanek, 2012). The Likert-scale is actually comprised of individual Likert-items and only the sum of each item determines the actual scale (Vanek, 2012).

Based on the example of the research questionnaire (QLS), each of the 54 closed-answer possibilities represents one Likert-item and is displayed in the form of a series of radio buttons that range between “Strongly agree” and “Strongly disagree”. That means, the Likert-scale for this specifically designed questionnaire ranges between 54 (lowest scoring) and 270 (highest scoring).

In the 5-point Likert-scale, respondents were given the opportunity to select a mid-point representing the option “Neither disagree nor agree”. By providing that neutral option, the questionnaire was less aggressive in pushing for a forced choice and represented a genuine

alternative judgement allowing respondents to have and express a different opinion to what was presented in the questionnaire (Barker, et al., 2005). With that, the research took into consideration the existence of multiple perspectives on the research topic and that not all of them could be displayed holistically in a single questionnaire.

4.7 Interviews as a measurement tool (qualitative)

According to Barker, et al. (2005, p.96), 'An interview is a special type of conversation aimed at gathering information, although the interviewer usually has a written guide, known as an interview protocol or schedule. [...] Interviews are usually conducted face to face, although occasionally they may be done over the phone.' Interview methods consist of various types and can be classified as structured, semi-structured or unstructured interviews. All of them usually follow a non-experimental design and aim to gain a deeper understanding and knowledge about individual(s) thoughts, feelings, meanings, behaviours, and interpretations regarding a specifically chosen research topic (Woods, 2011).

The semi-structured qualitative interview is hereby the most commonly used qualitative self-report method and is usually based on open-ended questions that are loosely structured and aim to get an in-depth account of the topic. Due to the pre-planning of semi-structured interviews, they are easy to replicate and increase the data reliability since at least some questions are standardized and can be compared and analysed among respondents (Barker, et al., 2005; Woods, 2011).

By taking a personal approach in form of semi-structured interviews, the interviewer has also the opportunity to build rapport with the interviewee and gain a deeper understanding of the meaning and intentions of the respondent. With that, an interview provides several advantages over a quantitative research approach (e.g. a questionnaire). Major benefits include the following (Barker, et al., 2005):

- The possibility of asking follow-up questions in order to clarify the respondent's meaning and probe for material that is not spontaneously answered by the respondent. By asking follow up questions, the interviewer gets the chance to get beyond superficial responses and discover true underlying thoughts and opinions.
- The interviewer can make sure that all questions are answered.
- The interviewer can ensure that all instructions are understood and performed correctly.

- The interviewer can vary the order to the questions.
- Respondents have the chance to ask their own questions and clarify topics with the interviewer and they have the sufficient time and scope to talk about their opinions on a particular subject.
- The researcher has time during an interview to gather enough information to make judgements about the validity of the respondent's self-report.
- The interview is a flexible tool for data collection and enables the use of multi-sensory channels including verbal, non-verbal, spoken and hearing channels

For the above mentioned reasons, a semi-structured interview style will be designed for the purposes of this research and applied and exercised among selected respondents.

4.7.1 Qualities of a 'good' interview

In order to make an interview valuable, the relationship between the respondent and the interviewer is of utmost importance and determines whether the provided answers become valuable descriptive data that can be analysed and interpreted by the researcher (Hsiung, 2010). Therefore, building a trusting relationship is a first step towards a successful interview.

Secondly, the skills of the interviewer play a crucial role in creating comfortable conditions for the respondent. By starting an interview, the interviewer should explain the purpose of the interview, give reasons why the participant has been chosen and provide an outlook on the approximate duration of the interview. The interviewer should also seek the consent of the respondent and ensure the confidentiality of the information provided (Woods, 2011).

During a semi-structured interview, it is important to ask the planned questions skilfully, to allow questions to flow naturally and to not rush the respondent to provide answers in a hurry. The interviewer should encourage the respondent to speak at length and listen actively to the answers provided without being biased, judging or leading (Hsiung, 2010; Woods, 2011).

The aim of a 'good' interview is the uninhibited flow of talk with a high focus on the quality of the response. According to Hsiung (2010) a 'good' response includes the following characteristics:

- Responses are in form of narratives, that include more than opinions and information;

- Responses are detailed and descriptive instead of abstract;
- Responses are personal and based on first-hand experience instead of generalisations; and
- Responses have emotional significance to the respondent.

Therefore, a 'good' interview is highly dependent on the skills of the interviewer and his/her abilities to create a comfortable environment for the respondent and encourage the active exchange of information between interviewer and interviewee. According to Hitchcock (2011), additional positive attributes of a good interviewer include the following:

- The interviewer is a good listener who pays attention to what is being said but also uses paraphrasing and reflecting techniques to validate responses and ensure that what the respondent is saying is clearly understood.
- A good interviewer is curious and open-minded and should not conduct an interview with pre-conceived notions or agendas. The interviewer fulfils a non-biased and non-judgemental role in interviews.
- An interviewer should be a good observer who looks beyond the given answers of the respondent. Non-verbal behaviour and visual cues provide additional context for the respondents' actual state-of-mind and feelings.
- A 'good' interviewer is mentally agile and able to think quickly about follow-up questions and probes to get the desired information.

As the interviewing skills contribute to one of the most important factors for a successful interview, they are at the same time one of the biggest limiting factor.

4.7.2 Delimitations of an interview

As the skills of the interviewer play a crucial role in getting valuable responses from the interviewee, a lack thereof presents a great limiting factor in interviews. If the above mentioned interviewer skills are lacking or missing completely, the quality of the responses cannot be ensured and there might be a chance of bias. If the interviewer is not able to listen actively and 'read between the lines' of the respondents' answers or has his/her own opinion regarding the topic, the interviewer might give out unconscious signals that are misleading and guide the respondent to give expected answers (Woods, 2011).

The second limiting factor for interviews is the time aspect. To conduct personal interviews is very time consuming and usually expensive. Thirdly, the sample size is smaller than for

surveys which influences the validity of the results and make a generalisation regarding the research topic rather difficult (Woods, 2011).

4.7.3 Development of the semi-structured interview

As a first step in the development of the semi-structured interview, an interview protocol has been established that lists all important areas that need to be addressed with the respondents and follows a similar framework as the questionnaire (QLS). The interview content is aligned with the identified quantum leadership behaviour during the gap analysis and focuses on six specific sub-sections. In the different sections, the interviewer intends to find answers regarding worldviews, organisational design, personal values, response to change, as well as leadership skills and styles.

The interview schedule starts with some general questions in order to build a first rapport with the respondent and introduce him/her to the research topic. The other standard questions relating to each sub-section serve as aide-mémoire to remember the main focus points during the interview and ensure the complete coverage of the research topic.

However, the interview is not limited to the identified standard questions and leaves room for spontaneous questions in-between in order to react to the respondent's needs and gain more detailed information on certain sub-sections of the research topic.

The interview schedule will be divided into three distinct parts: (1) the opening, (2) the body, and (3) the closing.

The opening will clearly indicate the objectives of the interview and clarify the topics that will be addressed throughout. In order to motivate the respondent to provide answers, the benefits of the research will be explained and an indication of the length of the interview provided. In the body of the interview schedule, the topics and potential questions will be covered and probing questions included. In the closing section, the main issues discussed during the interview will be summarized and the respondent will be thanked for taking the time during the interview.

The comprehensive interview protocol can be found in Annexure B.

4.8 Reliability and Validity

The concepts of reliability and validity, that usually reflect the consistent and truthful

presentation and evaluation of statistical data, have to be adjusted for the purpose of a qualitative research (Golafshani, 2003). According to Golafshani (2003, p. 601), ‘reliability is a concept to evaluate quality in quantitative study with a “purpose of explaining” while quality concept in qualitative study has the purpose of “generating understanding”’. Therefore, this study seeks to be consistent in the presentation of information in such way, that the reader is able to easily follow the argumentation and generate a general understanding of the research problem. The term validity in qualitative research should be replaced by trustworthiness, which is defensible and establishing confidence in the findings (Golafshani, 2003). All information presented in the study will therefore be truthful, accurate and objective in order to establish a neutral viewpoint and critically reflect findings and statements from various angles. The truthful presentation of information as well as the avoidance of error and misleading knowledge, ties in with the concept of research ethics (Resnik, 2011). Guidelines for authorship, data sharing, copyrights, and confidentiality rules will be adhered to at all times throughout the study and thus guarantee the researcher’s accountability to the public.

4.9 Research Ethics

According to The Belmont Report (1979, p.2), a group of 11 American men and women have been commissioned the task to “identify the basic ethical principles that should underlie the conduct of biomedical and behavioural research involving human subjects and to develop guidelines which should be followed to assure that such research is conducted in accordance with those principles”. As a result, the identified principles have been published in the so-called Belmont Report which has become the primary ethical framework for protecting human research subjects by discussing the boundaries between practice and research, basic ethical principles, and applications.

The three main principles and according applications of The Belmont Report are outlined in Table 4.5. below.

Table 4.5. Basic ethical principles and applications as outlined in The Belmont Report

Ethical Principles for Research	Applications of Ethical Principles for Research
<p>Respect for Persons</p> <ul style="list-style-type: none"> • Individuals should be treated as autonomous agents • Persons with diminished autonomy are entitled to protection (e.g. children, elderly, prisoners) 	<p>Informed Consent</p> <ul style="list-style-type: none"> • Volunteer research participants, to the degree that they are capable, must be given the opportunity to choose what shall or shall not happen to them • Privacy protection • The consent process must include three

	elements: o Information, o Comprehension, and o Voluntary participation
Beneficence <ul style="list-style-type: none"> • Human participants should not be harmed • Research should maximize possible benefits and minimize possible risks • Research should be seen as an act of kindness or charity, not only a concrete obligation 	Assessment of Risks and Benefits <ul style="list-style-type: none"> • The nature and scope of risks and benefits must be assessed in a systematic way • The researcher must maintain confidentiality
Justice <ul style="list-style-type: none"> • The benefits and risks of research must be distributed fairly 	Selection of Subjects <ul style="list-style-type: none"> • There must be fair procedures and outcomes in the selection of research participants • The exploitation of vulnerable populations must be avoided

Source: The Belmont Report, 1979, pp. 22-40

The research in this dissertation is aligned with the above mentioned research principles and follows the recommended code of conduct throughout the qualitative and quantitative research methods.

4.9.1 Respect for persons and informed consent

All research participants in this research will be treated as autonomous persons and will not be harmed in any physical or psychological way. All selected individuals enter the research voluntarily and will be provided with the adequate information related to the research topic including the research procedure, its purpose, as well as risks and anticipated benefits. The respondents will have the opportunity to ask clarifying questions and to withdraw from the research at any given time. Furthermore, it is up to the respondent to disclose any personal information and is not specifically required by the researcher.

4.9.2 Beneficence and the assessment of risks and benefits

The nature of this particular research ensures that participants are not harmed in any way and possible risks are minimized or even non-existent. The research intends to benefit the management society at large by providing new prospects and suggestions to the nature of conducting business and re-thinking leadership thoughts. However, the research is not enforcing this new leadership paradigm in any way and it remains under the discretion of the reader to draw own conclusions regarding the research topic and identify possible long-term

benefits or risks for their own organisation.

4.9.3 Justice and the selection of subjects

Despite differences in age, experience, competence and position of the selected research participants, all responses and provided answers will be treated equally and given the same weight. There will be no social, racial, sexual or cultural bias and all respondents are treated the same. The selection process for the participating respondents in the qualitative part is, however, not random and targets an audience that is easily available to the researcher at the time of the research. By doing that, it is not intended to target a particular class or minority and do injustice to certain individuals – it purely serves the purpose of the research and the possibility of targeting respondents with a high level of experience in the selected industry.

4.10 Conclusion

This chapter discussed the triangulated mixed methods approach used in the research design and explained the derivation of the quantitative and qualitative research tools. The application of a mixed method approach in order to validate research data has been established as most suitable practice for this dissertation and aims at collecting reliable information regarding the research topic. The high focus on ethics and data validation ensures the unbiased presentation of results and is aligned with the basic principles of research methodologies.

Chapter 5: Research Analysis and Findings

5.1 Introduction

This chapter on research analysis, seeks to evaluate the data and information within the context of the normative theory phase (refer to Chapter 4, section 4.5.2) of the applied research methodology. Through the derivation of the semi-structured interview protocol, as well as the Quantum Leadership Survey (QLS), the selected research tools have been stipulated among the selected sample groups in order to validate the assumptions of the research objectives.

Therefore, this chapter attempts to find answers regarding the secondary research objectives by establishing to what extent a new form of leadership behaviour can be observed in the international airline industry and whether quantum-leadership traits in the selected organisations can be found. This will be followed by the discussion of the primary research objective in the subsequent chapter. The primary objective is achieved as an outcome of the secondary research objectives being met. Thus, the QLS and the semi-structured interviews are deployed to gather information from the selected sample groups in terms of the research topic and analyse the resultant data.

The QLS and semi-structured interview results will be analysed by way of:

- quantitative data analysis, through a convenience sample study in the case of the QLS; and
- qualitative data analysis, through a purposive sample study in the case of the semi-structured interviews

Through the application of a mixed methods design, the analysis is both quantitative and qualitative and seeks to answer different areas of the primary research objective where information are triangulated in order to reach more reliable conclusions and to achieve a higher validity of the suggested outcomes. The data triangulation is applied in Chapter 6.

In this Chapter, a descriptive analysis is applied in the case of the quantitative survey in order to determine the status of quantum leadership behaviour in the international airline industry and express results in the form of statistical data outcomes.

A qualitative analysis, through semi-structured one-on-one interviews, is used to qualify the outcomes of the QLS and validate the findings therein.

5.2 Quantitative analysis through convenience sampling

The data from the sample group, being a convenience sample (refer to Chapter 4, section 4.4.4.1), was used to determine, in a realistic setting, whether the assumptions and predictive outcomes suggested by the quantum paradigm and its relating leadership skills, exist in a real-world scenario and whether a tendency towards a new form of leadership is emerging.

The first two open-ended sections of the QLS (see Annexure A) referring to the industry and

leadership behaviour in general, were used to analyse and evaluate a general trend in the assessment of the industry behaviour and leadership in the observed organisations. Data from this part of the questionnaire will be depicted with the help of qualitative analysis methods (refer to Chapter 5, section 5.3) and displayed together with the quantitative evaluation in section 5.2.2.8.

The data from the closed-ended questions in the six different dimensions (referring to worldview/paradigm, organisational structure, values, response to change and complexities as well as leadership skills and leadership styles) were analysed in order to establish if a behavioural shift from Newtonian-Cartesian characteristics towards Einsteinian-quantum characteristics can be observed among the respondents. For that purpose, a quantum leadership matrix was established where the different answer possibilities were classified and characterised by a specific value according to the Likert system. Low Likert scale outcomes (e.g. 1 or 2) indicate a preference for a Newtonian-Cartesian paradigm, whilst neutral Likert scale outcomes (a Likert scale outcome of 3) can be classified as neither Newtonian-Cartesian nor Einsteinian-Quantum specific. However, Likert scale outcomes of 4 or 5 denote a tendency towards Einsteinian-Quantum characteristics.

The QLS survey consisted of 54 closed-ended questions in the six different dimensions. If respondents score very low on each of the questions, the minimum total score they can obtain is 54. This is an indication that very little or almost no Einsteinian-Quantum behaviour and skills were observable and that the respondent tends to show Newtonian-like characteristics. Thus, a shift in paradigm thinking would not be observable. If respondents reached a total score between 54 and 161, they would still fall below the 50% mark of quantum leadership behaviour and thus would be classified as Newtonian-Cartesian with very low observable quantum characteristics. Respondents ranging between the 50% and 75% mark showed an increased quantum-like behaviour and will be classified as showing medium quantum behaviour. Respondents scoring higher than 216 in the QLS showed a very high degree of quantum behaviour and leadership skills in the sense of the emerging paradigm and will be classified as showing high quantum-like behaviour.

This classification will lead to the identification of a range of response possibilities that can either be depicted as Newtonian-Cartesian behaviour specific (cumulative Likert scale outcomes between 54 and 161) or Einsteinian-Quantum behaviour specific (cumulative Likert scale outcomes between 169 and 270). The cumulative scores between 162 and 168 are classified as being neutral and neither a tendency towards Newtonian-Cartesian nor

Einsteinian-Quantum behaviour can be observed among respondents.

Table 5.1 depicts the scoring system and outlines the range between no observable quantum behaviour to high observable quantum behaviour. The colour scheme will also be applied for the quantum leadership matrix (refer to Chapter 5, section 5.2.2.7) with red and orange marking the Newtonian-Cartesian range, blue indicating a neutral range and light and dark green depicting medium and high degrees of quantum leadership behaviour, respectively.

Table 5.1. Observable quantum leadership behaviour based on the Likert scores

Percentage	0%	25%	50%	75%	100%
Likert scores	54	108	162	216	270
Likert values	1	2	3	4	5
Observable quantum behaviour	No observable quantum behaviour	Low observable quantum behaviour	Neutral behaviour neither tending towards the one or the other	Medium quantum behaviour	High quantum behaviour

5.2.1 Limitations in the quantitative data analysis

Although the initial sample frame for the convenience sampling was quite large (>13,000), the number of responses was small and only a few individuals participating in the LinkedIn group, were willing to enter and complete the online survey. Thus, the usable data is limited to 0,01% of the actual sample. However, those respondents who did participate in the survey did show an interest in the topic and were knowledgeable about the construct. For that reason, the small sample is not considered a major deterrent in the outcomes.

Due to the relatively small sample size, a generalisation to the overall population will not be possible and is left for further research in the future with better access to larger sample sizes and relevant individuals in the aviation industry. However, the results from the QLS will be used to support the outcomes of the one-on-one interviews and back up the suggested paradigm shift with new tangible leadership characteristics (refer to Chapter 2, section 2.4.4) in order to determine whether a new form of leadership is emerging. This information will be triangulated to form a holistic informational set (combination of qualitative and quantitative data) to align findings and conclusions.

5.2.2 Results of the quantitative research

The QLS has been administered among a conveniently selected LinkedIn group (AMG – Airline Manager Group) in order to target managers and leaders in the airline industry and capture their answers regarding the research topic. The data received from the 26 fully completed surveys were stored and analysed by means of online survey software (Qualtrics) as well as a manual capturing of information in the form of a QLM (refer to Chapter 5, section 5.2.2.7). The variables from the 54 closed-ended questions were identified, coded and statistically analysed by means of:

- Bar charts; and
- Descriptive statistics in the form of mean (denoting centrality of their perceptions), standard deviation (denoting spread around the measure of centrality, i.e. the level of disagreement with the mean perception).

In the following sections, the quantitative research results will be analysed according to the structure of the QLS which has been divided into six dimensions referring to different research topics. These dimensions are as follows in the questionnaire:

Section/dimension 1: Worldview/paradigm;

Section/dimension 2: Organisational structure;

Section/dimension 3: Values;

Section/dimension 4: Response to change and complexities;

Section/dimension 5: Leadership skills; and

Section/dimension 6: Leadership styles.

5.2.2.1 Quantitative results for Dimension 1: Worldview/paradigm

The aim of the first dimension of the survey was to develop an understanding regarding the worldview of the participants and get an impression on how they perceive an organisation in the context of its environment. This dimension was clustered into eight separate statements (denoted by S) that could be ranked from “strongly disagree” to “strongly agree”. The results of each statement (S1 to S8) are displayed as follows:

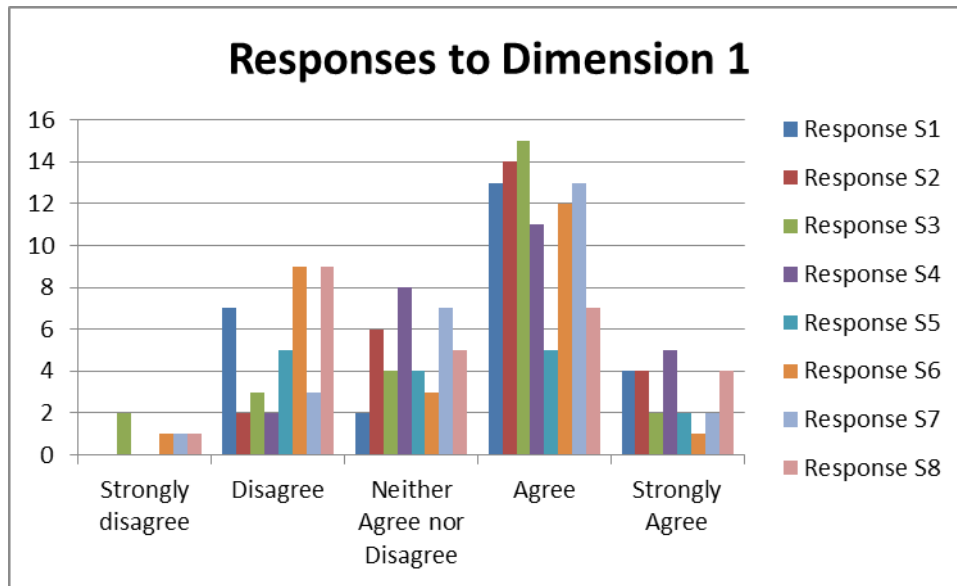


Figure 5.1. Consolidated responses for Dimension 1 testing for worldview/paradigm (n=26)

Figure 5.1 depicts that the participants showed a strong tendency throughout this dimension to agree to the given statements concerning worldviews and the mean response for the dimension (worldview) lies at 3,47. The measures of central tendencies (mean) and measures of variability (variance and standard deviation) for the individual statements are displayed in Table 5.2 below. All the following tables in each dimension are sorted according to the mean from the highest to the smallest mean per statement.

Table 5.2. Measures of central tendencies and variability for Dimension 1 (worldview) sorted on the mean

Dimension 1	Statement	Mean	Variance	Standard deviation
S2	Everything in the universe is interrelated and as such we need to understand organisations as similar constructs that operate in an interconnected state	3,77	0,66	0,82
S4	Any environment is created through objective perception and subjective cognition and as such individuals create a subjective reality	3,73	0,76	0,87
S1	An organisation is a holistic system in which all stakeholders influence the future organisational state	3,54	1,14	1,07
S5	The environment consists of cause-and-effect relationships in which outcomes can be predicted and certain scenarios are foreseeable	3,54	0,82	0,90
S3	The universe is self-organising and emergent and as such we need to understand organisations as self-organising and emerging	3,46	1,14	1,07
S7	The universe is eternally connected and as such we need to understand organisations in a holistic context rather than a single entity	3,46	0,90	0,95
S8	Complex problems can only be solved holistically instead of breaking it down into separate parts	3,15	1,42	1,19
S6	Order naturally emerges out of chaos	3,12	1,15	1,07
Mean of means		3,47		

The highest agreement was found in Statement 2 (S2) where organisations are understood as interrelated entities that operate in an interconnected state. With the highest mean (3,77) and lowest standard deviation (0,82) it is an indication that the majority of respondents were in agreement regarding this statement and tend to understand that individuals as well as organisations do not operate independent of their environments. However, participants were also on high agreement in terms of the control statement (S5). The mean for Statement 5 lies at 3,54 which indicates that participants tend to agree to that statement although it entails Newtonian-Cartesian characteristics. In a quantum worldview, relationships are non-linear and outcomes are rather difficult to predict. That means, that the answers to Statement 5 do not resemble a quantum-like worldview and the majority of participants do not show a clear tendency towards a quantum paradigm. Although the overall responses are positive and confirm the quantum paradigm statements, participants tend to reside in a neutral state where they neither strongly agree to the given statements or strongly disagree. From that perspective, it can be concluded that participants still reside in a transition phase where both Newtonian-Cartesian and Einsteinian-Quantum aspects are prevalent. The

highest disagreement among respondents was found in Statement 8 (S8) concerning the resolution of complex problems. A standard deviation of 1,19 shows that participants were less in agreement whether problems should be rather approached holistically or broken down into separate parts. Therefore, some participants showed a higher tendency towards a quantum worldview than others and opinions were diversified.

5.2.2.2 Quantitative results for Dimension 2: Organisational structure

The second dimension engaged in the structure of an organisation. The aim of the seven statements was to identify and understand the natural tendencies of the participants towards structure itself, different levels of hierarchies, and individual roles within an organisation. The responses to that dimension look as follows:

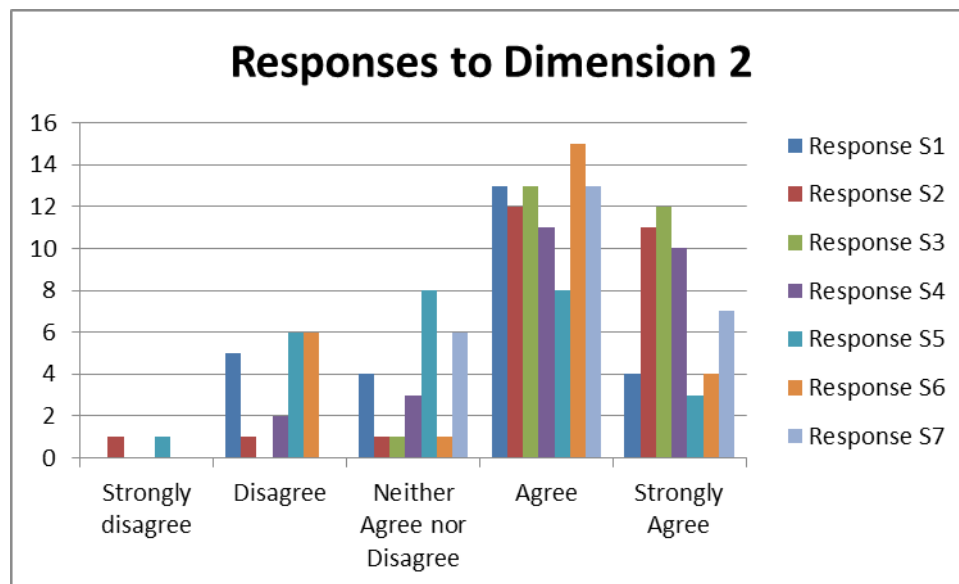


Figure 5.2 Consolidated responses for Dimension 2 testing for organisational structure (n=26)

Similar to Dimension 1, the results in figure 5.2 also showed high tendencies for agreement towards the statements in Dimension 2, where respondents were asked to provide their opinions in terms of organisational structure. The mean response for Dimension 2 lies at 3,90 and is higher than that in the first dimension. The tendencies for the individual statements are presented below:

Table 5.3. Measures of central tendencies and variability for Dimension 2 (organisational design) sorted on the mean

Dimension 2	Statement	Mean	Variance	Standard deviation
S3	The definition of clear roles and responsibilities within an organisation is necessary to achieve long-term goals and hold individuals accountable	4,42	0,33	0,58
S2	The organisational structure is influenced by the individuals working in it	4,19	0,96	0,98
S4	Information should flow freely and be available to everybody at all times	4,12	0,83	0,91
S7	Dynamic organisational structures are more effective in managing complexities	4,04	0,52	0,72
S6	Organisational strategy follows organisational structure	3,65	1,04	1,02
S1	Different levels of hierarchy assist in maintaining order within an organisation	3,62	0,97	0,98
S5	Low managerial control creates a learning environment and provides structures that empower individuals for higher performance	3,23	1,14	1,07
Mean of means		3,90		

In this dimension, three control statements with Newtonian-Cartesian characteristics have been included to balance the statements and avoid bias in the questionnaire. The control statements were S1, S3, and S6. Although S6 and S1 find lower agreement than other statements in this dimension, the overall tendency among respondents is still to agree positively to them and display their agreement in terms of Newtonian-Cartesian thinking. Control statement 3 (S3) even reaches the highest agreement among respondents with a mean of 4,42. That means, that respondents were very much in favour of clear roles and responsibilities although in a quantum worldview roles within an organisation become less meaningful and rigid job descriptions are hindering the creative flow. The least agreement was found in Statement 5 (S5) where respondents vary about their opinions regarding low managerial control in organisations. According to quantum thinking, leaders should be able to let go of their control and empower others to achieve higher performance. The disagreement with that statement shows again the divergence among respondents and there is no clear tendency towards a consistent quantum thinking observable.

5.2.2.3 Quantitative results for Dimension 3: Values

The third dimension covered the topic of personal values. Respondents were asked to relate to eight statements and rank their level of agreement. The statements corresponded to personal growth, organisational culture and values, as well as values regarding relationships and power. The results are provided below:

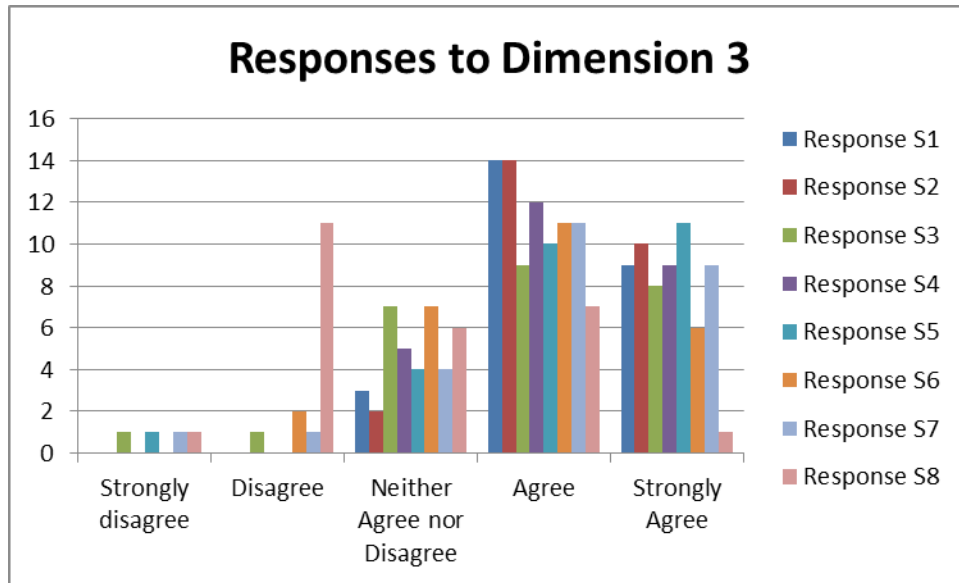


Figure 5.3. Consolidated responses for Dimension 3 testing for values (n=26)

Most respondents seemed to agree and strongly agree to the provided statements in Dimension 3. The overall mean for this dimension is 3,92.

Table 5.4. Measures of central tendencies and variability for Dimension 3 (values) sorted on the mean

Dimension 3	Statement	Mean	Variance	Standard deviation
S2	Value being respected by people within your organisation	4,31	0,38	0,62
S1	Value continuous personal growth in all areas of your life	4,23	0,42	0,65
S4	Value a warm and empathetic organisational culture	4,15	0,54	0,73
S5	Value the input from others in holistic decision-making	4,15	0,94	0,97
S7	Value strong relationships with individuals	4,00	1,04	1,02
S3	Value your intrinsic values above organisational values	3,85	1,10	1,05
S6	Value being recognised as being unique	3,81	0,80	0,90
S8	Value the feeling of power and control	2,85	1,02	1,01
Mean of means		3,92		

As in all the other dimensions, control statements have been included consisting of Statement 2 (S2) and Statement 8 (S8). They incorporate Newtonian-Cartesian characteristics in order to create a balanced questionnaire. Once again, it was noticeable

that the respondents valued Statement 2 above all others in this dimension and with that showed a clear tendency towards Newtonian-Cartesian thinking. The second control statement regarding the feeling of power and control, however, was clearly rejected. Despite the low mean of Statement 8, the standard deviation is relatively high compared to the other statements and indicated that there was a general disagreement on that statement. As in Dimension 1 and Dimension 2, the conclusion for Dimension 3 is similar. Respondents showed a high agreement for the Einsteinian-Quantum statements but at the same time incorporate Newtonian-Cartesian thinking. Therefore, the results are inconclusive and respondents seem to incorporate both ways of thinking and seem to reside in a transition phase.

5.2.2.4 Quantitative results for Dimension 4: Change and complexity

Dimension 4 aimed to develop an understanding on how the participants respond to statements of change and complexity. The seven statements covered topics such as the predictability of events, the importance of change for organisational growth, and certain triggers of change. The responses of the participants are depicted below:

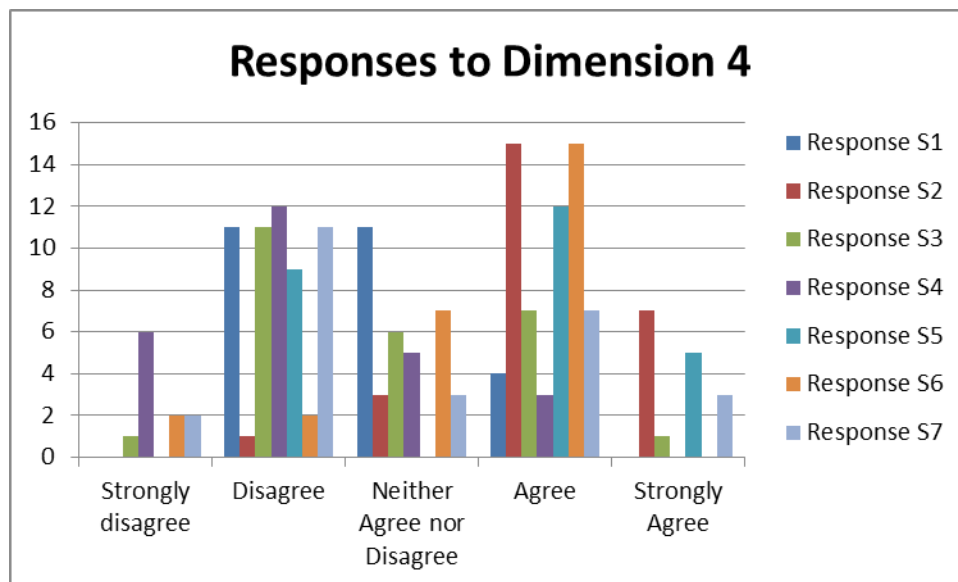


Figure 5.4. Consolidated responses for Dimension 4 testing for the response to change and complexities (n=26)

As indicated by figure 5.4, the responses to that dimension were very diverse and no clear tendency was observable. The mean for Dimension 4 is 3,09 and resembled a rather neutral point of view in terms of responding to change and complexity.

Table 5.5. Measures of central tendencies and variability for Dimension 4 (change and complexity) sorted on the mean

Dimension 4	Statement	Mean	Variance	Standard deviation
S2	Change is initiated not only by external forces but also appears from within the organisation	4,08	0,55	0,74
S5	Constant change is inevitable and maintaining a state of equilibrium is hindering organisational growth	3,50	1,38	1,17
S6	Complex structures contain patterns of order	3,35	0,88	0,94
S7	Future outcomes in complex structures cannot be foreseen or predicted as the exact behaviour of relationships and interdependencies between parts cannot be determined	2,92	1,51	1,23
S3	The triggers of change are unpredictable and complex and cannot be foreseen	2,85	1,02	1,01
S1	An organisation is a deterministic (=predictable) system	2,73	0,52	0,72
S4	Organisations can only react to change rather than proactively anticipate it	2,19	0,88	0,94
Mean of means		3,09		

In this section of the questionnaire, two control statements were incorporated (S1 and S4). These statements also reached the lowest means within that dimension which showed that the control statements have fulfilled their role and respondents demonstrated their disagreement to the Newtonian-Cartesian thinking. The other statements show a rather moderate level of agreement and the means of the Einsteinian-Quantum statements vary between 2,85 and 4,08. The highest disagreement among respondents was found in Statement 6 (S6) concerning the predictability of outcomes. The mean settles at 2,92 with a standard deviation of 1,23. This indicated, that the opinions on that matter varied widely and there was no clear tendency towards a definite quantum-like response, where complex structures cannot be foreseen due to their interdependent relationships.

5.2.2.5 Quantitative results for Dimension 5: Leadership skills

The dimension concerning leadership skills formed the biggest part of the survey and entails sixteen statements. For that reason, the answers are split into two separate graphs that contain eight questions each in order to depict the data clearly. Dimension 5 consisted of statements relating to the behaviour of leaders and managers in the organisation, in terms of decision making, employee motivation, problem solving and the building of relationships. The responses to that dimension looked as follows:

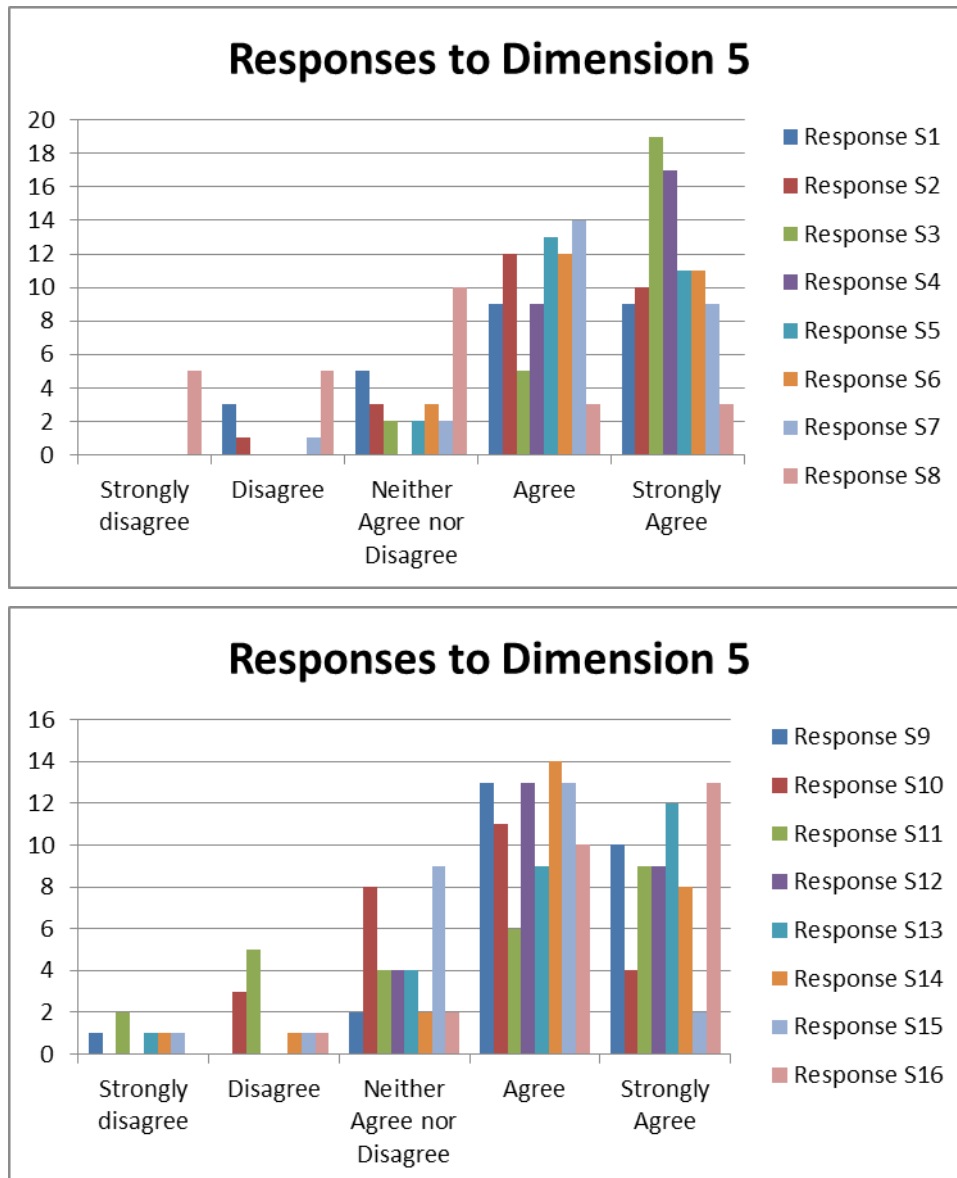


Figure 5.5. Consolidated responses for Dimension 5 testing for leadership skills (n=26)

As the two graphical displays above for Dimension 5 already suggest, the agreement among respondents was the highest throughout the questionnaire and the mean lies at 4,05 which is also the highest of all six dimensions. The individual tendencies per statement are depicted below:

Table 5.6. Measures of central tendencies and variability for Dimension 5 (leadership skills) sorted on the mean

Dimension 5	Statement	Mean	Variance	Standard deviation
S3	Leaders should empower others to master personal challenges and growth	4,65	0,40	0,63
S4	The creation of an open environment for exchange and knowledge sharing is important	4,65	0,24	0,49
S5	Building rapport among members of the organisation and foster sustainable relationships is important	4,35	0,40	0,63
S16	Emotions, feelings and empathy within an organisation are important to create a positive environment and enable a constructive flow of positive energy	4,35	0,64	0,80
S6	The different motivational needs and unique patterns of individuals working in an organisation should be recognised	4,31	0,46	0,68
S2	The combined active engagement of all members of an organisation to reach a state of shared decision-making should be encouraged	4,19	0,64	0,80
S7	The creation of the corporate culture and values should be encouraged	4,19	0,56	0,75
S9	Innovative problem solving and conscious exploration of ideas should be encouraged	4,19	0,80	0,90
S12	The uniqueness of individuals should be appreciated and the need for individualized motivational techniques recognized	4,19	0,48	0,69
S13	Collective wisdom leads to greater results in complex problem solving than individualistic and role-based decision-making	4,19	0,96	0,98
S14	Strategic planning assists an organisation in the informed decision-making process	4,04	0,92	0,96
S1	Silo thinking should be avoided and the organisational design should be seen as part of the greater whole	3,92	1,03	1,02
S10	Co-ordinating and supervising individuals contribute positively to the achievement of organisational goals	3,62	0,81	0,90
S11	Individuals in an organisation should be treated equally	3,58	1,85	1,36
S15	Situations should be handled intuitively and creatively instead of purely strategically	3,54	0,74	0,86
S8	A high degree of power should be exercised over employees	2,77	1,54	1,24
Mean of means		4,05		

The largest dimension in the questionnaire consisted of sixteen statements of which 68% reached a mean response above 4. This showed that the majority of respondents strongly agreed to the provided statements and show tendencies for applying Einsteinian-Quantum

thinking in terms of leadership skills. Dimension 5 included four control statements (S8, S10, S11, S14). They all ranked in the lower part of that dimension. However, respondents still showed a certain level of agreement to those statements and therefore display their agreement to Newtonian-Cartesian thinking and very few individuals have actually disagreed with those statements. The highest disagreement among respondents was found in Statement 11 which stated that employees should be treated equally. Although the mean lies at 3,58 (agreement), other respondents have disagreed with this statement in accordance with the Einsteinian-Quantum thinking that individuals should be recognised as being unique and treated accordingly. Overall, the dimension on leadership skills suggested that the majority of respondents strongly agreed to the quantum leadership skills and consider them to be the “right” approach to leadership.

5.2.2.6 Quantitative results for Dimension 6: Leadership styles

In the last dimension, respondents were asked to rank their tendencies towards leadership styles. Eight statements cover the topics of leadership behaviour in an organisation and how leaders should be selected. Also, individual characteristics have been covered and were rated by the respondents. The given rankings are provided below:

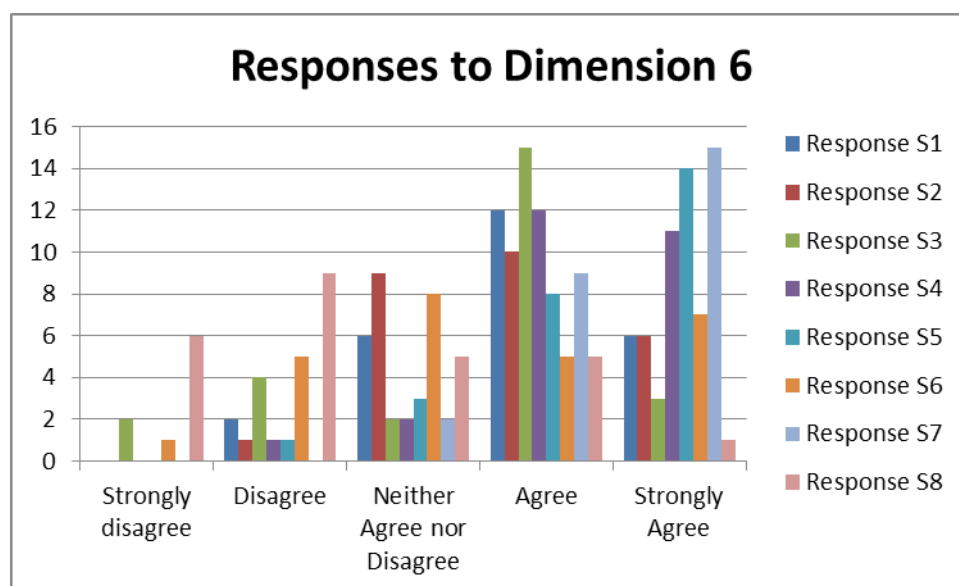


Figure 5.6. Consolidated responses for Dimension 6 testing for leadership styles (n=26)

In this dimension, the agreement to the provided statements was again relatively high and the mean response for the eight statements settles at a mean of 3,78.

Table 5.7. Measures of central tendencies and variability for Dimension 6 (leadership styles) sorted on the mean

Dimension 6	Statement	Mean	Variance	Standard deviation
S7	Leaders should act authentic and open-hearted in order to be accepted by followers	4,50	0,42	0,65
S5	Leading by example contributes to the successfulness of an organisation	4,35	0,72	0,85
S4	Passion and enthusiasm are important in initiating change within individuals and systems	4,27	0,60	0,78
S1	Leaders should merge out of situations instead of being appointed	3,85	0,78	0,88
S2	Group dynamics have the power to appoint leaders	3,81	0,72	0,85
S3	Leaders are intuitively "chosen" by their followers	3,50	1,30	1,14
S6	Work and private life should be separated in a business environment	3,46	1,46	1,21
S8	Only a few individuals should be in control of the decision-making process instead of involving entire groups	2,46	1,38	1,17
Mean of means		3,78		

Dimension 6 also included two control statements (S6 and S8) concerning the separation of work – and private life in a work environment as well as the role of group decision-making versus individual decision-making. Both control statements scored the lowest ranking in this dimension and participants showed their disagreement with the Newtonian-Cartesian thinking. The other statements were rated positively and the majority of respondents showed their agreement to the Einsteinian-Quantum paradigm where leaders emerge out of situations and should act authentic in order to be accepted. This goes hand in hand with the concepts of emergent leadership and authentic leadership which are already established leadership concepts in the business environment.

5.2.2.7 Quantum Leadership Matrix (QLM)

By giving a ranking to each response in the QLS as described in Chapter 5, section 5.2, it was possible to create a QLM that depicts the tendencies among the respondents towards a rather Newtonian-Cartesian leadership style or an Einsteinian-Quantum leadership style. The control statements throughout the questionnaire have been taken into consideration and their ranking has been reversed. The ranking system for the QLS was established as follows:

Table 5.8. Ranking system for the Quantum Leadership Survey (closed-ended statements)

Quantum Statements	Control Statements
Strongly disagree = 1	Strongly disagree = 5
Disagree = 2	Disagree = 4
Neither disagree nor agree = 3	Neither disagree nor agree = 3
Agree = 4	Agree = 2
Strongly agree = 5	Strongly agree = 1

As a result, the scores of the 26 participants were assembled in the form of the QLM where the different leadership types were colour-coded as described in Table 5.1 (Chapter 5, section 5.2). The scores lie between 154 (lowest score) and 213 (highest score).

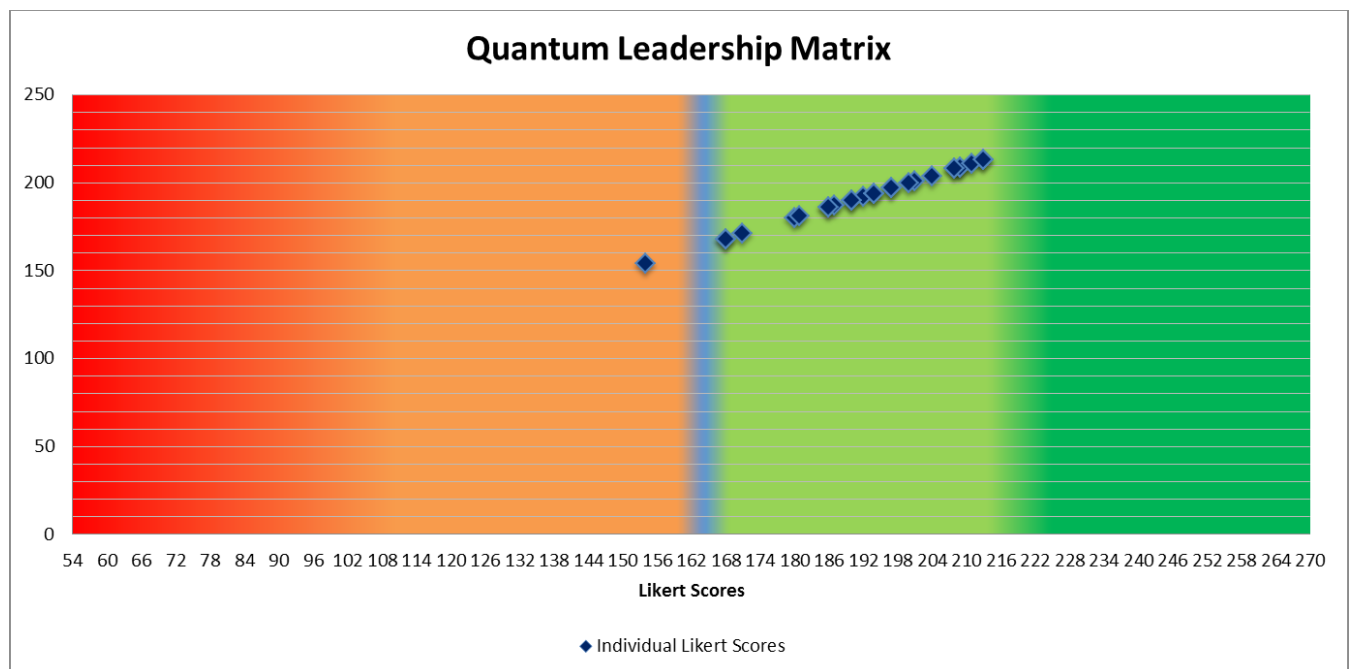


Figure 5.7. QLM indicating the quantum leadership behaviour among the survey respondents

Based on the Likert scores of the QLS, it can be concluded that the majority of the respondents showed medium quantum leadership behaviour and only one respondent resided in the low quantum leadership behaviour area. However, it is also noticeable that none of the participants could be classified as having high quantum leadership behaviour which was consistent with the outcomes of the individual dimensions where both Einsteinian-Quantum thinking and Newtonian-Cartesian thinking were observable.

5.2.2.8 Data analysis of open-ended survey questions

(i) The first open-ended question in the QLS asked the respondents to describe their current industry life cycle (e.g. growing, stagnating or declining) and provide reasons for their answers. From the 38 respondents, 34 individuals provided a clear statement. 70% rated the industry very positively and see the airline industry as growing. 18% perceived the industry as declining while the remaining 12% described it as stagnating. Therefore, the majority of the respondents had a very optimistic outlook and sees the airline industry as a growing

business.

(ii) In the second open-ended question, participants were asked to rate the industry as rather simple or complex and again provide reasons for their given answers. From a total of 36 respondents, only two rated the airline industry as simple without giving any further explanation for their answer. All other respondents rated the airline industry as complex and with that make up a majority of 94%. This also confirmed the results of the industry analysis in Chapter 3, section 3.4.7 where Porter's Five Forces model has been applied and concluded that the airline industry is one of the most volatile and complex industries in terms of the five forces.

(iii) The third question dealt with the factors influencing the complexity of the airline industry. The respondents were free to write an open-ended text and provide several answers to that question. 37 respondents have answered to that question and provided their personal opinions. Different factors were identified as recurring themes and the major influencing factors for the airline industry according to the survey are listed below:

1. Government regulations (49%);
2. Competition (43%);
3. Fuel prices/costs and Technology (both factors mentioned by 30% of respondents);
4. Economic conditions and Resistance to change (both factors mentioned by 19%);
5. Complexity and Power of stakeholders (both factors mentioned by 8%);
6. Safety; and
7. Corruption.

It can be concluded that the majority of respondents perceived government regulations, competition, cost structures and technological changes as major influencing factors that impact the industry environment.

(iv) The next question dealt with the topic of leadership and whether leaders are appropriately equipped to manage in a complex environment. Again, respondents had the chance to provide reasons for their answers in form of a free text structure of the question. The results provided by the 22 respondents who did answer that question were mixed and no clear trend was observable. Ten respondents (45%) felt that management is sufficiently equipped to cope with the complexities of the airline industry while twelve respondents

(55%) felt the opposite. Reasons for saying that leaders are not adequately managing complexities included the following aspects:

1. Managers and leaders are too slow to adapt to the changes of the environment;
2. Leaders who come from other industries have too little background knowledge about the airline industry and thus fail to manage it correctly;
3. Leaders don't see the bigger picture and forget the "little people"; and
4. Leaders have forgotten the human aspect and are too rigid in following through procedures.

(v) Question 5 of the open-ended section asked the respondents to provide three major factors that leaders are struggling with in their work environment. The 23 participants who did answer the question provided very diverse and individualised responses. Therefore, it can be concluded that individuals deal with a multitude of different problems and each person identifies their own subjective challenges. However, three aspects were outstanding and have been mentioned by various individuals. 41% of the respondents named "employee management" as a major aspect that they are struggling with. This was followed by "work-life-balance" (27%) and "informed decision-making" (18%).

As a possibility, this result might be an indication that the current leadership skills are not sufficient in managing employees effectively and that there is a lot of insecurity among respondents to make decisions with the lack of buy-in of their workforce. This again might lead to increased stress levels of leaders and managers which then result in an uneven work-life-balance.

(vi) The last question in the open-ended section dealt with the most important factors to sustain in a volatile/complex environment. Respondents were asked to provide their top three leadership skills for that particular purpose. 20 participants have provided their answers which were as diverse and different as in the previous section. Each individual valued different skills and rated them as most important on a subjective basis. Therefore, it was not possible to identify any clear trends or tendencies. The two most recurring factors mentioned were the ability to make decisions (25%) and to trust (25%) – in own capabilities but also to put trust in others. Other skills that were mentioned more than once include creative thinking, honesty, communication, flexibility, empathy and listening. These skills strongly resemble Einsteinian-Quantum leadership skills that have been identified in Chapter 2, section 2.2.4. and showed that there is a trend towards a new way of leadership thinking

where social skills, creativity and relationships play a superior role.

5.3 Qualitative interview validity analysis

As qualitative data does not consist of numbers, but mostly of words and observations in the form of text or narrative data, the evaluation is often referred to as content analysis which can be tackled in five different process steps. According to Taylor-Powell and Renner (2003) these steps include:

Step 1: Getting to know the data

In qualitative data analysis, it is very important to understand the data and its limitations and filter out the relevant information that add value and meaning to the content analysis. Therefore, reading and re-reading the text or listening to recordings several times becomes crucial.

The seven interviews were carefully read and re-read as suggested in Step 1 and the two recordings from the one-on-one interviews were listened to several times before type-writing them in order to be sure that the content and context were fully understood before attempting to transcribe into written text.

Step 2: Focus the analysis by either question/topic/time period/event or by case/individual/group

For the purpose of this research, the analysis will be focused by question. All the data collected from individuals participating in the interview was put together and organised by question in order to identify consistencies and differences among respondents. With that, connections and relationships between questions could be identified and evaluated more easily.

All answers per interview question were consolidated and organised by question in order to gain a better overview. With that, consistencies and differences were easier to spot. The consolidated interview protocol can be revisited in Annexure C.

Step 3: Categorise information

In this process step, abbreviated codes are assigned to the data in order to identify certain categories that can be either present or emerging. These categories provide direction in the analysis and help to identify recurring themes and patterns and to organise them into

coherent themes.

Due to the small sample size (seven interviews), the responses per question were directly compared during the work in progress and this exact process step has been skipped. No codes have been assigned. However, recurring themes have been identified and dealt with in the analysis.

Step 4: Identify patterns and connections within and between categories

By sorting data into different categories, patterns and connections within and between categories become visible and information can be summarised. For that purpose, key ideas, concepts, behaviours, interactions, similarities and differences can be pointed out and relationships can be identified.

As described in this process step, similarities and differences among the responses within and between dimensions were identified and described and analysed accordingly.

Step 5: Interpretation

By interpreting the data, the identified connections and relationships are useful to explain the findings where meaning and significance will be added to the data. Results can be presented in a final report, in illustrations or diagrams that help to point out the connections or even identify the gaps, where further research is necessary.

The interpretation of the content analysis will be discussed and displayed in Chapter 5, section 5.3.2.

5.3.1 Limitations in the qualitative data analysis

As the sample group consisted of conveniently selected participants that were available at the time of the data collection, the sample size is relatively small and limited to respondents from a single airline company spread over three different countries. Therefore, all participants worked in the same environment and no comparison can be made to other international airlines. Furthermore, due to the small size of the group, a generalisation of results will not be possible and the given answers provide only a small insight into the opinions and worldviews of selected individuals. However, the small sample size is not considered a deterrent as research by Guest, Bunce and Johnson (2006) suggests that the optimal interview number is rather small. According to their study, a number of twelve

interviews is sufficient for data saturation. "After analysis of twelve interviews, new themes emerged infrequently and progressively so as analysis continued." (Guest, G., Bunce, A. & Johnson, L., 2006, p.74)

As the selected individuals were spread internationally, one-on-one interviews with all of them was not possible. Only two individuals were interviewed personally. The remainder was requested to complete the questionnaire individually. Therefore, further probing and testing for additional answers was not possible in five out of the seven cases which might limit the quality and validity of the responses. Furthermore, due to language barriers not all of the participants were able to express themselves adequately in English which might lead to misinterpretations or misunderstandings of their statements.

5.3.2 Data analysis of the semi-structured interviews

As part of the research, seven semi-structured interviews were conducted with purposively selected individuals from a legacy airline company (see Chapter 4, section 4.4.4.1). The purpose was to gather in-depth knowledge regarding the industry and the specific leadership behaviour of those individuals in order to establish whether quantum-like characteristics could be observed. The sample group consisted of different management levels who fit the required profile. The one-on-one interviews were conducted in Cape Town/South Africa where the headquarters of the company are situated. The other participants have been contacted via email and filled out the questionnaire individually as they were spread internationally and based in Istanbul/Turkey and Brno/Czech Republic.

Similar to the QLS, the interviews have been clustered into six different dimensions which are consistent with those from the questionnaire. The dimensions included worldview/paradigm, organisational design, values, reaction to change and complexities, leadership skills and leadership styles. The interview also covered some personal background information as well as industry related questions.

The qualitative research results were analysed according to the questions that have been asked throughout the different dimensions starting with the industry related questions and then moving on to the six dimensions.

5.3.2.1 Qualitative results for the industry related questions

(i) In this section, the participants were asked to describe the industry they are working in

with the simple question “How would you describe your industry?”.

The top three answers and recurring themes among the seven respondents were the following:

1. Dynamic (4x);
2. Competitive and challenging (3x); and
3. Volatile (2x).

Other industry descriptions referred to innovative, complex, sensitive, safety-oriented as well as cost-driven.

The results go hand in hand with the outcome of Question 3 in the Quantum Leadership Survey (refer to Chapter 5, section 5.2.2.8 (iii)) where complexity, competition, cost pressure and safety issues were also identified and pointed out in order to describe the airline industry. Therefore, the interview results do match the questionnaire answers and support their validity.

(ii) The second industry-related interview question dealt with the complexity of the industry. Participants were asked if they think that the airline industry is more complex than other industries and if so, what factors make the airline industry more complex than others.

All respondents answered positively to that question and stated that the airline industry indeed is more complex than most other industries. However, most participants also acknowledged the fact that each industry faces its own challenges and complexities and it is not a mutually exclusive fact for the airline industry. Six out of the seven respondents have worked in other industries before and could compare their experience from different environments before answering the question.

In terms of the sub-question what factors influence the complexity of the environment, one answer stood out among several respondents. The safety factor plays a major role in the airline industry and impacts internal as well as external operations on a daily basis. The constant need for high safety standards puts a lot of pressure on airline companies and strongly contributes to the complexity of the industry environment. Other factors that were mentioned throughout the interviews included the connectedness of things, as well as economic, political and natural influences.

All of the respondents believed that the airline industry has always been that complex and that only in recent years the pace of change and innovations has increased. This factor also contributes to the volatility of the industry and requires organisations to adapt more quickly to the constant changes in the environment.

(iii) Despite the fact that all respondents felt that they have to manage in a highly complex environment, all of them felt appropriately equipped to face those challenges. Some participants were aware that individuals can always improve on their current status quo and that managing includes a continuous development of skills and techniques and is an ongoing learning process. Nevertheless, all of the seven respondents were confident enough to answer that question positively.

(iv) The last question in that section dealt with the topic of how to improve managing the complexities in the airline industry. The answers varied from respondent to respondent and each individual valued unique learning styles. While some respondents would like to receive more management training in order to feel better equipped, others simply would need more time for managing their teams and applying new management theories. Other factors that were mentioned included more transparency, clear structures, efficient resources and regular feedback on the own performance.

5.3.2.2 Qualitative results for Dimension 1: Worldview/paradigm

The first dimension (worldview) in the interview protocol was clustered into four main questions and subsequent sub-questions relating to topics such as the role of leaders, the interconnectedness of organisations and their environment, holistic problem solving, and whether order can be found in chaotic/complex situations.

Managerial role in the organisation

(i) Throughout the questions in the first dimension, it became clear that the managers from various levels perceived their role in the organisation quite similarly. While all of them believed that they carry the responsibility for their department's success, none of them felt solely responsible for the entire organisation and the respondents agreed that it is a joint effort of all parties to contribute to the overall organisational success. Four out of the seven participants explicitly mentioned that their role is to motivate their people and teams and support colleagues in their individual development.

Influence of stakeholders

(ii) However, all the respondents were also aware of the influence of other stakeholders and how they contribute to the success or failure of the organisation. A recurring theme during that question was the power of customers. In this organisation, the focus on customer satisfaction seems to be very high and there needs to be a lot of agility around customer demands. One respondent mentioned that customer satisfaction needs to be in balance with the staff satisfaction as the focus on one specific stakeholder (i.e. the customer) is too high. Other respondents acknowledged the fact that some stakeholders have more influence than others, but two respondents stated that they feel that internal stakeholders have a much higher influence on the success of the organisation than external stakeholders. So although the focus on external stakeholders is very high, people with certain positions within the organisation have actually greater power to influence the organisation's success.

Responsibility for creating the organisational environment

(iii) Another question in that dimension related to the organisational environment and who is responsible for creating it: either individuals in an organisation or top management. The answers of the seven respondents were very diverse. Only two respondents stated that the individuals working in an organisation are responsible for creating the organisational environment. The other participants perceived it more as a joint effort in which top management defines the anticipated culture and individuals have the chance to shape around that vision. One quote from a respondent expressed that opinion quite clearly: *"The top management delivers the frame, where the individuals can paint and create their own picture."*

The interconnectedness of the environment

(iv) Regarding the question whether organisations are interconnected with their environments, all of the respondents answered positively and see the relationships between internal and external events and how these can influence the state of the organisation. However, all the respondents were very vague in rating the degree to which internal or external factors influence an organisation. While one respondent answered that both factors need to be balanced, two respondents stated that in their particular organisation the internal factors play a more important role in influencing the organisational state than external ones. Nevertheless, six respondents agreed to the question whether an organisation always needs to be considered in the context of its environment instead of a single entity and thereby confirm the interdependencies to the environment.

Holistic problem solving versus root cause analysis

(v) The next question in this dimension dealt with the topic of holistic problem solving versus breaking things down into separate parts in order to find the root cause of an issue. The tendency among the respondents was very clear on that question, namely that both approaches can be useful depending on the particular problem. One respondent replied that *“both approaches have merit in the right kind of situation. Some things need to be solved holistically and some things need to be solved by looking at the root cause.”* As a conclusion, a manager or leader needs to decide what is most appropriate in certain situations but not exclude one approach nor the other. This approach was widely used among the respondents and five out of the seven participants answered that they use both techniques for problem-solving in their organisation. Only two respondents named holistic problem-solving and breaking it down into separate parts individually.

Chaos versus order

(vi) The last questions in that section dealt with the topic of chaos and order as well as personal preferences regarding the two. The specific question asked the respondents whether they believe that order can be found and established in a chaotic situation. Again, all the respondents answered that question positively and did believe that order exists in chaotic situations. Five out of the seven respondents preferred order over chaos and try to establish it in times of uncertainty. The other two respondents did not mention a clear preference.

5.3.2.3 Qualitative results for Dimension 2: Organisational structure

Retaining order in organisations

(i) The first question of the second dimension (organisational structure) asked the respondents whether retaining order in an organisation is of utmost importance for its success. Five out of the seven respondents answered that question positively and did see benefits in retaining consistency and order in their organisation as structure seems to be very important for them. One respondent argued that it is important “to give a framework for the people so that they know where they must go”. Another respondent mentioned that avoiding chaos is particularly important in the airline industry due to the safety-relevant environment and tasks that are related to it. Only two managers had a different opinion and acknowledged the need for chaos in order to be creative. According to one respondent “Skilled people can handle different designs simultaneously.”

The importance of roles and hierarchical levels

(ii) The answers regarding the question whether clear roles and hierarchical levels are beneficial in retaining order were a bit controversial among the respondents. The majority agreed that clear roles are definitely beneficial in performing tasks and sharing knowledge. They argued that clear roles support the structure of the organisation and in a way retain order. However, all of them stated clearly that too many hierarchical levels are hindering the success of the organisation and slow processes down. Therefore, the responses were two-folded where pre-defined roles were welcomed but hierarchies were perceived as hindering and not adding value to the organisational design.

Self-governing structures

This being said, six out of the seven respondents believed that by decreasing management levels in an organisation, the company would take on a self-governing dynamic and become self-sustaining as long as “roles are clearly designed and executed by the individuals within the organisation”. However, one respondent mentioned that there might be a limit to the size of such a self-governing structure and not every company would be suitable for such a system. One respondent clearly stated that in his organisation a lack of supervision would ultimately lead to chaos instead of a self-governing structure.

Free flow of information

(iii) The next question dealt with the availability of information within an organisation. One respondent answered that question with a definite “No” without elaborating on the reasons behind it. However, all other respondents agreed that transparency is important to create trust and commitment among the employees. Yet, the free flow of information should be limited to organisational information as employee matters, for example, should not be available to everybody.

Communication of goals and strategies

To not communicate the long-term goals and strategies of the organisation in difficult times of an organisation was rejected by all seven respondents as they felt “it is not right to keep information away from your employees” and in order to gain their buy-in, transparency and openness are key aspects in achieving that. Therefore, even in challenging times for the organisation, all relevant information should be freely available to employees to win their commitment.

Dynamic structures versus rigid structures

(iv) The next two questions asked the respondents whether dynamic structures are better suited to react to change and manage complexities and if individuals in their organisation are equipped to step out of their ordinary work role and perform other tasks. While all seven respondents agreed to the benefits of a dynamic structure, they also believed that most of the individuals in their organisation are able to perform flexible roles. However, three respondents acknowledged that this is only possible to a certain degree and that there is room for improvement. The tendency among the respondents was, that they are trying to establish flexible work roles, but that they have not been able to establish a state where that is common practice and accepted by all employees. All respondents agreed that a diversified skill set is available, but six out of the seven respondents admitted that they are not using the potential to its full extent.

5.3.2.4 Qualitative results for Dimension 3: Values

The third dimension dealt with organisational values, personal values and the importance of relationships in the work environment. The third dimension (values) consisted of five main questions and according sub-questions which were answered by the respondents as follows:

Company value creation

(i) The first question asked the respondents who in the organisation was responsible for creating the company values. Six out of the seven participants stated that their company values were created by top management which is the executive level. One respondent mentioned that employees were involved in the process, whilst another respondent answered that all stakeholders and employees were involved in formulating the company values.

Since all interviewed managers work in the same organisation, this result was a surprise since the perception around the value creation seems to differ among the managers. While the majority of the interviewed managers felt that employees had no involvement in the process at all, two managers described a very different picture and felt that all stakeholders had the chance to provide input.

The list of company values in this organisation is quite extensive and includes values such as responsibility, credibility, self-awareness, recognition, solution-oriented, pushing boundaries, excellence as standard, agility, belief in people, and unified diversity. However,

since safety was mentioned several times by the interviewed managers as key factor to sustain in the airline industry, it was interesting to realise that a value such as safety awareness, for example, is not specifically mentioned in the company values.

Intrinsic values versus organisational values

(ii) The next question asked the respondents whether they value their intrinsic values over the organisational values. The responses were very diverse. While two respondents answered that question with a clear “Yes” and naturally tend to go with their intrinsic values first, four respondents mentioned that “if you work for an organisation, your personal values and those of the organisation have somehow to be quite similar” and even overlap “because otherwise you will never feel comfortable enough to succeed in that place”. Therefore, the majority of respondents believed that it is important to balance their own values with the company values. Only one respondent stated that organisational values should be considered above intrinsic values.

Importance of a good work environment

(iii) Regarding the question if a warm and welcoming work environment in which individuals feel comfortable, is appreciated among the respondents, six out of the seven participants answered positively and value such a work environment. One participant, however, answered that question with a “No” without providing any reasons for the given answer.

Personal growth in an organisation

(iv) All of the respondents were in agreement with the next question of whether the opportunity to personally grow with the help of others below one’s own hierarchical level, is appreciated. All seven participants value input from others and for one respondent in particular the employee success and happiness and their trust into his management abilities are “more important to [him] than praise from the other direction.”

Organisational status and the importance of relationships

(v) The last section of this dimension (values) dealt with the appreciation of an organisational status, the possibility to exercise power and control over employees, and the importance of personal relationships. Again, the responses were very diverse and no clear trend among the interviewed managers was observable.

Four out of the seven respondents stated that they appreciate their status in the organisation

and enjoy being responsible for others as they “can help the organisation to be successful”. However, the feeling of responsibility seemed to be more important to those respondents who answered that question positively than the actual hierarchical status. One respondent even stated that he has no attachment to either of the two concepts status and responsibility. “Both are a creation of human illusion. That is more from a Marxism approach...already passé.”

To be in control of situations and to exercise power is very important to three out of the seven respondents and they admitted that they like it. On the other hand, another three respondents claimed that the control and exertion of power is not important to them. They rather prefer the concept of co-creation and one respondent mentioned: “I don’t like to use my power over situations. I like to use the power with everybody – not me on top.” Only one respondent distinguished the two concepts power and control and stated that she likes to be in control of situations, but seldom feels the need to exercise power.

Six out of the seven respondents also value good relationships to their employees, although one of them acknowledged the fact that “it is not possible to have perfect relations with everyone” when you manage a high number of individuals. One respondent does not value good relationships. His specific answer was that he does not think he has to have good relationships. However, all of the seven respondents agreed that it is useful to foster and emphasize on good strategic relationships “because you need them to be successful within your own department.”

5.3.2.5 Qualitative results for Dimension 4: Change and complexity

In this dimension the respondents were asked to provide feedback on topics concerning change and complexity. These topics included the predictability of organisations, personal behaviour towards change, complex problem solving, and the importance of strategic planning.

The predictability of organisations

(i) In the first question of that dimension (change and complexity), respondents were asked to evaluate whether an organisation is deterministic (=predictable). While two of the respondents answered that question with a clear “yes”, others were not that certain and answered more carefully. Three out of the seven respondents stated that an organisation should be deterministic, but at the same time acknowledged the fact that one needs to know

the industry environment very well in order to predict and foresee the impact of various influencing factors (e.g. environmental facts, politics, macro-economic risks, etc.). Only two respondents believed that organisations are non-deterministic and that “you can plan and you can have a good estimate, but in the end things will always be different.”

Action versus reaction to change

(ii) In the second question, the respondents were asked if they think that change can be triggered at any given time and cannot be foreseen by individuals and whether organisations can only react to change instead of initiating it. All of the respondents agreed that change can be triggered at any given time and five out of the seven participants also agreed that this change might not be foreseeable by individuals. However, organisations should be prepared for such scenarios. Two respondents stated that change can be foreseen most of the times even though it is not possible to predict every possible detail. All respondents were in agreement in regards to the sources of change and responded that both approaches are possible: organisations often react to changes in the environment but are also able to anticipate change from within.

Openness versus resistance to change

(iii) Regarding the question whether the respondents believe that their employees are open for change or rather resistant, the given answers were very similar. Six out of the seven respondents stated that by nature there are always individuals who are more resistant to change than others, but that there are also employees who are quite open to change. One respondent said that “it depends on the change and how you as a manager deal with it.” Another valuable observation of one respondent was the following: “...when we have anticipated the change with the employee involvement, we faced mostly no resistance. When there was a lack of involvement, it was the opposite.”

The importance of the organisational state

(iv) Further agreement among the respondents was found in the question whether keeping the organisation in a constant unchanged state minimizes the potential for learning and growth. All of the seven respondents answered that question positively and acknowledged the fact that without change there is no or very limited learning potential as well as limited opportunities for success.

Preferences towards change and problem solving

(v) The next questions in this dimension asked the respondents to rate their personal preferences towards change and to evaluate whether any complex problem has a solution and therefore can be solved. All seven respondents agreed to the latter and stated that there is always a solution to every problem even if it is not the result that was anticipated. The general tendency among the interviewed managers regarding change is very positive. They rated themselves as open to change and anticipating it if the current procedures are not successful. However, five out of the seven respondents also acknowledged that there is not always a need for change and “if it is a good way to do something, stick to it. If you find a better solution, change it.”

Importance of strategic planning

(vi) The last questions in that dimension dealt with the importance of strategic planning in an organisation and how often plans need to be changed due to unforeseen events that influence the original plan. Again, all seven respondents agreed that strategic planning is a very important task in their organisation, which needs to be adjusted regularly. One respondent stated that a plan is not a definite state, “it is more a wished forecast which has to act like a boat on the sea. Otherwise, the waves will pull it down.” The responses on how often plans need to be changed varied from quite often (on a daily basis) to monthly. One respondent even stated “Too many times” which shows a certain level of frustration and an underlying feeling that plans should not change too often. Another respondent pointed out a direct connection between the amount of changes in the strategic planning to the frequency of changes within the management team. This manager believed that “if there would be consistency [in the management team], we would have less changes.”

5.3.2.6 Qualitative results for Dimension 5: Leadership skills

The organisation as big collective

(i) The opening question for that dimension (leadership skills) asked the participants whether an organisation should act as a big collective in which individuals have an equal stake. While three respondents answered that question with a clear “No”, two other respondents saw it quite differently and agreed to the statement. One respondent said that the individual responsibility for the company grows through this. The remaining two respondents answered more carefully and acknowledged that a big collective would be nice in an ideal world, but both of them admitted that such a scenario is unrealistic at the current state of their organisation.

The importance of good relationships

However, all of the respondents agreed that good relationships among employees are important and all of them encourage collective thinking in which departmental thinking (silo-thinking) is avoided. One respondent mentioned more specifically, that most challenges do not affect only one specific department, but many different ones. Thus, “if you don’t have good relationships between the departments and they can’t work together to overcome the challenges, the organisation would have a big problem.”

The importance of shared decision-making

In that perspective, all of the seven respondents believed in shared decision-making and the active engagement with employees. For one respondent, “shared decision-making and engaging with employees is the key to getting their buy-in for the things you would like to achieve.”

Responsibility for creating the corporate culture

(ii) Regarding the question whether all individuals in an organisation are responsible for creating a positive and strong corporate culture, the answers of the respondents were mixed. While four of the seven respondents agreed that it starts with the individual, three respondents answered more carefully and said that it should be an individuals’ responsibility, but they also acknowledged that not everyone does participate in the process.

Recognising the uniqueness of individuals

(iii) Consistent agreement among all seven respondents was found again in the next question which asked the leaders if they recognise the uniqueness of each individual. All of them answered that question positively, although one respondent acknowledged that it is very difficult to stick to and that a leader has to be consciously aware of the fact and try to achieve it on a daily basis.

Employee empowerment

All seven participants also agreed to the question whether they empower individuals according to their needs in order to master challenges and grow in the organisation. All of them recognized the need for empowerment, although three of the seven respondents were aware of certain organisational limits. However, those three participants responded that they are at least trying to empower individuals whenever the situation allows for it.

The identification of employee needs

(iv) In the next question, the respondents were asked to describe how they personally identify individual needs in their organisation. Six out of the seven respondents were of the opinion that communication and personal talks are the key to identifying individual needs. Other methods that were mentioned along communication include listening, being open and observing individuals.

Employee motivation

(v) In terms of employee motivation, all respondents had a rather unique approach and provided different answers. The variety of answers by the seven respondents confirmed that all of them believe in the uniqueness of individuals and that there is no general recipe on how to motivate all employees at once. Different individuals require different motivation approaches. However, for two of the seven respondents, caring about the individual and believing in employees is key to successful motivation.

Preferences for different learning styles

(vi) The following questions asked the respondents whether they believe in the concept of learning-by-doing for employees and if situations should be handled intuitively and creatively rather than strategically. Five out of the seven respondents were in agreement to the first question and believe in the concept of learning-by-doing. The other two respondents also favour that approach, but they acknowledged the fact that different people might prefer different learning styles and that learning-by-doing is not superior above other learning styles. The answers to the second question were rather vague. Five out of the seven respondents said that it depends on the specific situation and that both approaches (intuitive versus strategic) can be quite useful depending on the required outcome. One respondent answered that a balance between the two would be perfect, while two other respondents observed a trend to a more intuitive approach.

Organisational handling of mistakes

(vii) The next question asked the respondents what happens if employees make mistakes. All seven respondents answered that question very similarly and were of the opinion that mistakes are human and that there should be a support system for employees which helps them to reflect on their mistakes and formulate solutions to avoid the same or similar mistakes in the future. All of them agreed on a non-punitive culture. However, one of the

respondents answered quite frankly and admitted that in his organisation “in many situations there will be a more punitive-natured response [from managers]” when someone makes a mistake.

The importance of the co-ordination and supervision of employees

(viii) The next question asked the respondents whether they believe that the co-ordination and supervision of employees is beneficial in achieving organisational goals. While five out of the seven respondents answered that question positively and perceive supervision as a value-add, two of the respondents did not believe in such a strict concept. Two respondents said that it is not necessary to control what employees are doing. Through continuous feedback and sharing perspectives between managers and employees, it automatically materializes whether the established processes and procedures add value to the organisation.

Emotions at the work place

(ix) The last section of this dimension (leadership skills) dealt with emotions at the work place and how personal feelings in a work environment are perceived among the respondents. The questions asked included the following aspects: whether emotions, feelings and empathy help to create a positive work environment; whether it is a sign of weakness as a leader to show emotions; and whether it is perceived as unprofessional when decisions are based on emotions instead of rational thoughts. Lastly, the respondents were asked if their own emotional state of mind influences their behaviour at work.

Six out of the seven respondents answered the first question positively and believed that emotions, feelings and empathy for others do create a positive work environment. Only one respondent said that in some situations too much of it eventually blurs the decision-making process.

Similar agreement was found in the next question where six out of the seven respondents believed that showing emotions is not a sign of weakness in the work place. Two respondents, however, admitted that in some situations an outburst of emotions might be seen as a sign of weakness and “sometimes managers have to stay strong and without showing emotions” in order not to irritate their people.

In terms of the question whether decisions based on emotions are regarded as

unprofessional, the general tendency among the respondents was that it is not perceived as unprofessional per se. Two respondents said that it depends on the situation and both approaches can be successful. However, the majority of respondents favoured decisions that are based on rational thought and one respondent said that even in emotional decisions, some rational thoughts should be included.

In the last question, four out of the seven respondents admitted that their own emotional well-being certainly influences their behaviour at work. Two out of the seven respondents said that they try to separate their private life from their work life, but also admitted that it is not always possible. However, both respondents were of the opinion that personal emotions should not drive you at work. Only one respondent answered that question with a clear “No”.

5.3.2.7 Qualitative results for Dimension 6: Leadership styles

In the last dimension (leadership styles), the participants were asked to share their personal thoughts on leadership styles. The opening question asked them whether they think that any individual can take over the role of a leader in the right situation. While two of the seven respondents answered with a definite “No”, explaining that such a situation is unrealistic, four respondents did not share the same opinion. They said that in the right situation, individuals with talent could take over the leadership. One respondent did not provide any answer to the first question.

The importance of leadership skills

(i) The first section was followed by the questions if leaders need particular skills to lead people and if individuals naturally look for someone to follow and intuitively decide on that person. In the latter case, all of the seven respondents were in agreement and stated that choosing a leader is an intuitive choice which is based on personal relationships, beliefs and values. Regarding the required skills for a leader, the participants provided diverse answers. Two of the seven respondents believed that a leader does not need any particular skills. One respondent answered that leaders don't need skill, but values and vision instead. The remaining four respondents had rather unique opinions and rated talent, social skills, empathy, emotional intelligence, motivating skills and knowledge as most important leadership skills.

Leadership appointment

(ii) In the next question, the participants were asked whether leaders should be appointed by superiors or chosen by the people who work with them. The answers from all seven respondents were very vague, as well as diverse. Four of the seven respondents said that it depends on different factors including the organisational structure, the organisational goals, and corporate culture. One respondent was of the opinion that leaders should be appointed by the people, another respondent replied that leaders should be appointed by superiors in order to be productive, and a third respondent answered that it should be a combined decision.

The leader as role-model

(iii) Further agreement was found in the following questions regarding authentic leadership, the importance of a positive attitude in order to initiate change within individuals and systems, and being a role-model. All of the seven respondents agreed that for long-term success, leaders need to be authentic and truthful and that a positive attitude has a positive effect on the long-term success of the individuals and the organisation. All of them also agreed that leaders should lead by example and be a role-model to their followers.

Born leaders versus trained leaders

(iv) The last question in that dimension asked the participants whether they believe that true leaders are born or that good leadership can be learned. While three of the seven respondents agreed that true leaders are born and can continuously improve on their already existing skills, one respondent said that leadership is a talent which can be performed to excellence. According to this particular respondent, if that talent is missing, leadership cannot be excelled. The remaining three respondents believed that leadership can entail both. Some individuals are born leaders, but “people who are not born with it can learn it and [they] are not unable to learn certain skills that can improve leadership skills.”

5.4 Conclusion

In this chapter, the gathered data from the QLS and the semi-structured interviews were displayed and analysed. In that process, similarities in the quantitative and qualitative data were observable. Both research tools were structured in a similar manner in order to allow for direct comparisons. The highlight from the quantitative data analysis was the creation of the QLM which visualises the leadership tendencies in the international airline industry. The therein found leadership characteristics showed medium tendencies for quantum leadership behaviour which is compliant with the results from the semi-structured interviews. In both

research methods, mixed results were observable and the majority of the research participants showed diverse leadership behaviour that included both Newtonian-Cartesian and Einsteinian-Quantum characteristics. With that, it can be concluded that the status quo of the international airline industry was established and a trend to a new form of leadership towards Einsteinian-Quantum like behaviour is emerging. This evaluation provided the answer to the last secondary objective of this dissertation.

Chapter 6 takes this analysis further and articulates triangulated findings against the primary research objective as it seeks to deduce conclusions from the analysis in Chapter 5 through the triangulation of quantitative and qualitative analysis results. In doing so, this research attempts to find solutions to the primary research objective which seeks to answer the question whether a new form of leadership paradigm is triggered by the emergence of increasingly volatile environments.

Chapter 6: Conclusions and recommendations

6.1 Introduction

This research set out to establish whether a new form of leadership is triggered by volatile environments. More specifically, this dissertation is set in the international airline industry to review the existing leadership behaviour in that particular industry and determine if a paradigm shift between Newtonian-Cartesian and Einsteinian-Quantum worldviews and leadership characteristics is emerging. The research setting was selected due to the emergence of the increasing volatility of the airline industry (see Chapter 3, sections 3.3 and 3.4).

For that purpose, the following research objectives were formulated in Chapter 1, section 1.3.2:

Primary research objective: The primary objective of the research is to explore the evolution of a new form of leadership paradigm triggered by the emergence of increasingly volatile environments as described in section 1.1.

Secondary research objectives: Based on the primary objective, four distinct secondary objectives were established:

- The determination of the characteristics of a Newtonian-Cartesian leadership style.
- The determination of the characteristics of an Einsteinian-Quantum leadership style.
- The determination of the features of a volatile environment in the 21st century.
- The establishment of the status quo of leadership behaviour within a volatile industry in order to evaluate whether a new form of leadership paradigm is emerging.

Furthermore, a gap analysis has been developed for Newtonian-Cartesian and Einsteinian-Quantum leadership skills and a scenario for the desired quantum organisation has been established. Based on the literature review, the main features of a quantum worldview have been depicted and converted into the qualitative and quantitative measurement tools for this research. To validate whether a new form of leadership is emerging among leaders and

managers in the international airline industry, a QLS and semi-structured interview protocol have been constructed for and validated by selected sample populations. By applying both qualitative and quantitative research constructs, results are presented in a triangulated analysis and thus obtain a greater reliability and validity in terms of their applicability.

6.2 Research synthesis

This section seeks to provide a detailed overview of the research conclusions throughout the dissertation.

In Chapter 2, a gap analysis was established in order to identify possible gaps between a Newtonian-Cartesian and Einsteinian-Quantum worldview. For this purpose, an in-depth literature review from the scientific bases of both worldviews has been conducted and information has been gathered in a theoretical model of a future quantum organisation. The areas of concern included six different dimensions that covered the topics of worldview/paradigm, organisational structure, values, response to change and complexities as well as leadership skills and leadership styles. With that, a theoretical gap analysis between existing organisational models (referred to as Newtonian-Cartesian organisations) and the ideal future scenario (referred to as Quantum organisation) has been established. The two opposing worldviews have been depicted in the gap analysis and were then applied to organisations in the international airline industry, using the quantum leadership survey as paradigm shift model. The basis for the quantum leadership model is comprised of already existing leadership theories including transformational leadership, authentic leadership, emergent leadership, dissipative leadership, integrated leadership and spiritual leadership models. Holistically combined and further processed, those models lay the foundation for the newly emerging leadership paradigm referred to as Quantum Leadership.

The gap between a Newtonian-Cartesian organisational model, its values and leadership behaviour and the Einsteinian-Quantum model was defined. The gap was based on the different worldviews of both concepts as defined and developed throughout this dissertation.

In order to derive the concept for the Quantum Leadership Survey (QLS), the individual secondary objectives will be discussed below and then triangulated to obtain the primary objective outcomes.

6.2.1 Characteristics of a Newtonian-Cartesian leadership style

Through the literature review in Chapter 2, it has been established that most of the Newtonian-Cartesian leadership characteristics are based on a rather rational view of the world which is highly influenced by the ideas of Bacon (1620), Descartes (1637) and Newton (1687). In this simple, linear world, the universe is completely knowable and predictable in which stability and clear structures are fundamental aspects for retaining order. This belief system has shaped the leadership paradigms of the past centuries which are marked by numerous examples of cause and effect relationships, rigid rules and regulations as well as hierarchical structures. Based on the research and analysis of the different leadership eras, numerous Newtonian-Cartesian characteristics were identified and listed as major leadership styles. In doing so, Fayol's principles of management and leadership skills (refer to Chapter 2, Table 2.2.) were used as main reference to present valid characteristics of the "old" leadership paradigm. Traits such as command and control, supervision, planning skills, a sense for hierarchies, as well as discipline are only a few characteristics that are incisive for the Newtonian-Cartesian leadership paradigm.

The existence of such leadership characteristics in today's business environment was confirmed by the outcomes of the QLS and semi-structured interviews in Chapter 5. Some responses of the QLS revealed that managers and leaders in the airline industry still inherit Newtonian-Cartesian thinking. For example, the majority of respondents were in strong agreement with the statements that the environment consists of cause-and-effect relationships in which outcomes can be predicted and that the definition of clear roles and responsibilities is necessary in order to achieve organisational success. Similar opinions were found in the semi-structured interviews where questions were often answered very vaguely and no clear position was taken towards a clear Einsteinian-Quantum paradigm nor Newtonian-Cartesian paradigm. An example for that was the question regarding holistic problem solving versus breaking things down into individual parts. All of the respondents replied that both approaches are applied in business depending on the situation and that neither of them has a preference for any of the two approaches. This indifference in answering the questions showed that Newtonian-Cartesian leadership styles are still manifested in the behaviour of managers and leaders and are prevalent in the modern business environment.

6.2.2 Characteristics of an Einsteinian-Quantum leadership style

Other than the Newtonian-Cartesian characteristics, the Einsteinian-Quantum characteristics

are based on the ideas of Einstein's and Planck's discovery of quantum physics and scientific concepts such as relativity theory, quantum mechanics and chaos theory. In this worldview, the universe is not predictable but rather probable; things cannot be separated from the whole but have to be observed holistically; and chaos creates a new level of order rather than destabilisation. Since the theory in Chapter 2 suggests that no specific skill set yet exists that can help to steer through the dynamics of an uncertain environment, the list of leadership characteristics of the Einsteinian-Quantum paradigm is a mere suggestion of possible leadership traits that might become helpful in dealing with internal and external uncertainties and managing the complexities of an unknown and chaotic future. However, their actual suitability in managing complex environments has yet to be established.

The ideas and theories of Danah Zohar (2004; 2015) and Porter-O'Grady & Malloch (2014) were used as main references for the identification of Einsteinian-Quantum characteristics. As Danah Zohar is considered a pioneer in the field of quantum leadership and a world-wide leading expert on management thoughts, physics and philosophy; her ideas and concepts of Einsteinian-Quantum leadership characteristics were considered especially useful in determining a new form of leadership paradigm. In 2002, she was titled one of "the world's greatest management thinkers" (Brown, Crainer, Dearlove & Rodrigues, 2002) and greatly influenced the research of this dissertation.

A list of key leadership characteristics was established in Chapter 2, Table 2.3. Therein, the main features of Einsteinian-Quantum characteristics consist of the competence for EQ and SQ, the ability for holistic thinking, the commitment to create sustainable relationships, to believe in the concepts of collective wisdom and co-creation, as well as the capability to reflect and become self-aware.

The QLS and semi-structured interviews were structured in such a way to test for the above mentioned leadership traits (excluding the competence for SQ) and their results delivered valuable insights. Based on the data of the QLS, it was concluded that managers and leaders of the airline industry showed medium quantum behaviour; meaning that the majority of questions were answered in accordance with the concepts of a quantum leadership paradigm. The outcomes of the QLS confirmed the existence of the identified Einsteinian-Quantum characteristics in a real business environment and established that the participating managers and leaders are already in the process of changing their leadership behaviour towards a more quantum-like approach. The positive outcome of the QLS was

also supported by the results of the semi-structured interviews.

6.2.3 Features of a volatile environment

Through the literature review in Chapter 3, the key elements of a volatile environment were established based on the example of the airline industry. According to the research and analysis of Porter (2011), there exists only a few industries where the “5-forces” are as strong as in the airline industry and therefore, it was considered a suitable example to display the overall features of a volatile environment. The main aspects that were taken into consideration included factors such as supply and demand, cost and pricing structures, substitution and commoditisation, other economic factors, as well as Porter’s Five-Forces framework (2011). Based on the analysis of those factors, it was concluded that the airline industry is one of the most volatile industries in the world that leaves little room for any profit potentials and in which investors struggle to achieve a sufficient return of investment. Furthermore, the high level of competition among existing airlines and the lack of differentiated strategies contribute to the unattractiveness of the market and the extreme volatile business environment. Other identified factors influencing the profitability of the airline industry included rising fuel costs, a challenging economic climate, as well as tight profit margins. The outcomes of the literature review were confirmed by the results of the quantitative and qualitative research results. Through the open-ended questions in the QLS, 94% of the participants rated the airline industry as complex. They rated government regulations (49%), competition (43%) and rising fuel prices/technology (30%) as top three influencing factors. The interview respondents were also asked to describe the airline industry and the top three answers included dynamic, competitive and challenging, as well as volatile.

Thus, the mixed methods research design allowed that the outcomes are in accordance with the literature review and therefore confirm its validity.

6.2.4 Status quo of leadership behaviour in a volatile environment

The QLS and semi-structured interviews showed that the status quo of the airline industry can be described as a mixture of “old” and “new” leadership thinking and that both Newtonian-Cartesian as well as Einsteinian-Quantum behaviour was observable. This observation is in accordance with the gap analysis in Chapter 2, section 2.5. Therein, gaps between a pure Newtonian-Cartesian and Quantum organisation were identified and displayed in Table 2.4. The same gaps were established during the QLS and semi-structured

interviews. Although the majority of the survey and interview participants answered the questions in accordance with a quantum leadership paradigm, some Newtonian-Cartesian behaviour was still observable. Therefore, the QLM classified the survey participants as medium quantum leaders. Similar results were obtained from the semi-structured interviews where the majority of respondents showed medium quantum-like behaviour but also inherited, to some extent, Newtonian-Cartesian-like thinking.

Thus, it was established that in both research methods mixed results were observable and the majority of the research participants showed diverse leadership behaviour that included both Newtonian-Cartesian and Einsteinian-Quantum characteristics.

6.2.5 The emergence of a new form of leadership

This research has shown that managers and leaders of the tested volatile environment reside in a transition phase in which “old” leadership characteristics (based on a Newtonian-Cartesian worldview) are still manifested in the behaviour of managers and leaders. Nevertheless, it appears that the numerous new management concepts such as authentic leadership, situational leadership or emergent leadership (to name a few examples only) are already influencing and changing the way of leadership thinking. The outcomes of this dissertation showed that managers and leaders of the airline industry also internalized medium quantum-leadership behaviour and are in the process of developing a better understanding of the Einsteinian-Quantum paradigm and its relating leadership ideas. In this transition phase, both leadership paradigms are prevalent and no distinct classification of neither Newtonian-Cartesian nor Einsteinian-Quantum leaders was possible.

However, the research showed that there is a clear trend away from the Newtonian-Cartesian paradigm towards a new leadership era that includes quantum-like characteristics. The identification of medium quantum behaviour through the QLM confirms such transition in a real business environment. Thus, it can be concluded that a new form of leadership is emerging that combines the ideas of already existing leadership models (e.g. authentic leadership, situational leadership, etc.) as well as the beginnings of a more spiritual level in which self-awareness, co-creation and empowerment play a fundamental role. Nevertheless, businesses reside in a transition phase where old and new leadership models are still prevalent and a change in leadership thinking only occurs slowly.

6.3 Research value

6.3.1 Scientific value

(i) Impact on social and management sciences

The validation of the Quantum Leadership Survey (QLS) and the analysis of the semi-structured interviews have implications for organisational design, human resource management and business management disciplines, such as strategy. The QLS provides a tool that allows for additional scientific research in order to investigate and understand the impact of complex environments on individuals and businesses and their response to various factors within that environment. This knowledge can have an impact on long-term business decisions, employment tactics and organisational design.

(ii) Impact on physics and natural sciences sectors

This dissertation attempts to combine different physical theories (quantum physics, complexity theory) with the field of management sciences and therefore aims to find and build cross-discipline relations between real-world problems and scientific theories. The combination of various disciplines to investigate and understand problems of interest can lay the foundation for other scientific sectors to widen the horizon and enable new forms of research that are based on cross-discipline initiatives.

(iii) Impact on psychological sciences

The study of quantum theory leads into the direction of conscious interaction between physical matter and the human mind and goes beyond pure scientific explanations for physical phenomena. Quantum physics also opens the dimension for the spiritual world which goes beyond the discipline of clinical psychology and requires a new way of thinking in terms of the universe and the relationships that exist in it.

6.3.2 Business value

The validation of the QLS and the individual interviews conducted within the context of the international airline industry, is an indicator for the status quo of leadership behaviour in a specifically chosen complex industry. Therefore, the QLS and the interviews have revealed important leadership findings for the international airline industry and one is able to comment on selected companies competing on a global scale, as the purposive sample was set in this environment.

6.4 Limitations of research

6.4.1 Limitations in theory and methodology

Due to the nature and scientific assumptions based on the Einsteinian-Quantum worldview that the world is interconnected, outcomes are unpredictable, and not all influencing variables can be known, it can be concluded that the outcome of this dissertation is limited in its validity and will vary depending on the circumstances in which outcomes have been produced. Thus, a generalisation across all instances cannot be made and the dissertation does not suggest such a theory. Therefore, assumptions about a certain outcome are purely limited to the researched industry and not conclusive in a general sense.

Secondly, the population size used in this dissertation to test the QLS is very limited. Thus, it is suggested that the results will not be conclusive to draw general assumptions on the research topic.

Thirdly, the QLS is specifically designed and tested in an explicitly chosen industry. Although the survey is designed holistically, it is possible that tested under different circumstances and across various industries, the suggested paradigm shift might not be observable. However, given the characteristics of the airline industry as expounded in Chapter 3, any industry showing similar characteristics with respect to volatility will benefit from the outcomes.

Additionally, the research has been conducted mainly across western cultures within a global setting. Although the derived questionnaire and interviews are designed holistically, it might be possible that results that have been observed in a more westernised culture are not observable in a different cultural setting.

6.4.2 Limitations in terms of available literature

Available academic literature in terms of quantum leadership and forms of quantum organisations outside the healthcare industry is rather limited. Most sources date back to the 1980s to 1990s and it was challenging to obtain a great variety of recent literature on that topic itself and expanding to different industries.

6.4.3 Limitations in quantitative and qualitative analysis

(i) Data volumes

Due to the limited participation in the Quantum Leadership Survey, the usable data volume

for the convenient sample study is limited and restricts the validity and generalisation of the results. The findings provide a mere indication of leadership behaviour and indicate tendencies within the chosen industry.

(ii) Convenient nature of the QLS sample group

The QLS has been stipulated among a convenient study group that has been specifically selected due to their experience and belonging to a designated group of airline managers. With that, the selection approach has been subjective. However, the QLS did deliver valid and consistent information on the outlined topic.

(iii) Limitation in usable interview data

The interviews have been conducted and stipulated among seven conveniently chosen individuals that have been selected based on their availability and experience in the field of airline management. Only two of the seven interviews have been conducted one-on-one. The other five interviews have been sent via email to the selected respondents and filled out individually without further investigation by the interviewer. Thus, there are differences in the quality of the provided answers. However, all responses have been equally used to draw conclusions on the research topic and are considered valid for triangulation purposes.

6.4.4 Assumption based limitations

(i) Physical science assumption

In this dissertation it was assumed that the outlined scientific concepts of quantum physics and Newtonian physics have been well defined, studied and tested to be factual, within the limitations of research methods available.

(ii) Management science assumption

It was assumed that the displayed leadership concepts are also well defined, studied and tested to be factual. All theories outlined in this research are assumed to be correct and accepted as scientific theories.

6.4.5 Delimitations to 'good' research

In this dissertation, research findings will be based on both qualitative and quantitative data. Qualitative data was collected in the form of observations, personal interviews and historic interview data from individuals. Quantitative data was collected in the form of survey results which can also be classified as "subjective". Since individuals were asked to provide their

personal perspective on their state of organisational leadership and worldview, a purely statistical and objective analysis of information was difficult to obtain. By dealing with human beings instead of statistical data, this dissertation is limited in its purely scientific approach and factors in human and cultural delimitations that have an effect on the overall conclusion regarding the dissertation topic. According to Pellissier (2007), the scientific method works ‘...best where you can isolate the phenomenon of interest and can repeatedly test the system under study after making limited controlled changes to it...there are situations where this is not possible...for example, social interactions between people’ (in Hall, 2008).

As this dissertation is highly focused on research on the emergence of a new form of leadership and its inclusive change in paradigm thinking, it is important to note the limitations of a classical research approach and that rational empiricism cannot provide a holistic range of answers to the research question posed in this dissertation. In other words, there is no single truth to the hypothesis raised in this dissertation as behaviour of individuals, their world-views or cultural influences highly impact the research values and cannot be broken down into specific empirical information. The survey and interview results provide an insight into individual viewpoints that eventually can be interpreted into a specific direction that lead to a subjective conclusion about the research topic.

However, the fact that research about social interactions and worldviews cannot be holistically summarised in a scientific research paper, positively supports the underlying assumptions of the Einsteinian-quantum theory in which relationships are non-predictable and things have to be observed holistically instead of separated from the whole (Pickup, 2000; Pellissier, 2004; Wheatley, 2006; Hall, 2008). Therefore, following and relying completely on the traditional research approach will matter-of-factly fail to provide conclusive answers to the research questions. It will help, however, to identify probabilities and tendencies in terms of leadership behaviour and assist in formulating scientifically supported assumptions.

6.5 Generalisability, validity and reliability

As already mentioned in section 6.4, there are certain limitations to the generalisability, validity and reliability of the research. The points that have been discussed in the previous section include challenges such as a small sample size, the limitation to a specific industry and westernised culture as well as restricted data volume. Based on these limitations, a generalisation to the wider population or across industries is not possible. Thus,

assumptions about a certain outcome are purely limited to the researched industry and not conclusive in a general sense. However, due to the application of two different research methodologies (quantitative and qualitative methods), the gathered data was triangulated in order to achieve higher reliability of results. Throughout the presentation of the research outcomes, the truthful responses were provided in an objective manner and data was analysed without bias. With that, the outcomes of the quantitative and qualitative analysis can be considered valid and deliver a general understanding of the research problem.

6.6 Recommendations

Through personal observations of the airline industry and analysis of the interview responses from the selected legacy carrier, it became clear that many managers and leaders are already equipped with the necessary mind-set and worldview in order to implement and exercise a quantum-like leadership style. However, it also became evident that the biggest hindering factor for the successful change of leadership behaviour is top management. In the case of the interviewed respondents, the majority of participants were willing and keen to apply a modern leadership style where relationships, trust and co-creation are central concepts in the work environment.

Based on the observations, however, it can be concluded that change is unlikely to happen if the core people and main decision-makers of an organisation do not internalise the same ideas and concepts of a quantum worldview and help to filter it down to the organisation. No matter how hard other managers in lower levels then try to implement a new leadership style, the desired effect and change is unlikely to occur and the company is unable to break through the vicious cycle of falling into old, Newtonian-like habits. A subjective conclusion entails, that an organisation can only change once the main actors are willing to change too and take over the function as role models for the entire company. According to Danah Zohar (2015), if people change their values, it will automatically lead to a change in behaviour and thus trigger a change in the overall culture.

Based on that statement, it is recommended to start to train and educate top management first on the concepts and ideas of quantum leadership. If top management would be willing to change their way of thinking and behaviour towards a quantum leadership paradigm, it is presumed that a transition of the entire organisation is much easier to accomplish when the main actors are supporting the new leadership ideas instead of acting against them. Although a top down approach is considered rather Newtonian-Cartesian and should be

avoided according to the concepts of the quantum paradigm, it might be reasonable in an organisation where Newtonian-Cartesian thinking is still existent and old structures prevalent. As this research has shown, it is still very difficult for managers and leaders of lower levels to turn around the organisational culture from a bottom-up approach.

6.7 Future research opportunities

Due to the rather small sample groups for both measurement tools (QLS and semi-structured interviews), it is suggested that the presented findings may not be conclusive and need to be tested against a wider sample group across companies and other industries in order to allow for further external validation of the QLM. An example of this would be the comparative study of leaders and managers within competitive airlines of the same airline sector (e.g. legacy carriers) or different airline sectors (e.g. low cost carriers, Middle Eastern carriers). Therefore, this could be viewed as an opportunity for researchers with a wider access to the airline industry and its key stakeholders to take the study further and test its validity through a larger sample size across various countries.

Furthermore, it has been established that spiritual intelligence plays a major role in quantum leadership behaviour and is, according to Zohar (2015), the key aspect in future leadership models. Since the QLS and QLM are not testing for SQ behaviour in individuals, this topic might be taken further and integrated into the already existing QLS. By adding the perspective of SQ in quantum leadership, researchers can draw further conclusions on leadership behaviour and analyse the overall importance of SQ in leadership models.

6.8 Concluding statements

The dissertation set out to establish whether a new form of leadership is triggered by and emerging from volatile environments. In support of this, a unique worldview has been presented that entails and integrates perspectives from quantum physics, social science as well as management science, into one holistic leadership model.

The QLM, which is based on the QLS, enables organisations to identify the status quo of individuals' quantum behaviour as a key element in quantum leadership and detect those areas that could be further developed in order to achieve greater effects on the behavioural shift in leadership. It is suggested that this shift in leadership behaviour positively impacts on organisational outcomes.

Finally, it is suggested that the QLS and QLM can be used as a unique organisational approach to measure holistic leadership behaviour within organisations that operate in complex environments and determine areas of well-directed future development for individual managers and leaders.

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Annexure A: Quantum Leadership Survey (QLS)

Determining an alternative leadership paradigm in a volatile environment

Overview of the Quantum Leadership Survey (QLS)

Dear prospective participant,

Based on the assumption that organisations and leadership theories reside in a phase of transition due to a shift in paradigm or worldview, the Quantum Leadership Survey in form of a questionnaire, has been designed to test this shift in complex environments and determine the status quo in specific industries that show high degrees of complexity. This shift is typically a move from a cause-and-effect linear view of the organisation to a complex adaptive system's view resulting in changed leadership behaviour and a more holistic worldview.

Please note that the survey is developed in such a way that it will retain your anonymity at all times and the researcher will have no way of connecting the provided information to you personally. Since the research is voluntary, you will be able to withdraw from the survey at any given time before submitting it online. If you do choose to participate in the survey, the questionnaire will take approximately 30 minutes to complete. Please designate 45 minutes to comfortably read through all questions, process the information and then answer as accurately and honestly as possible by marking the most appropriate radio button. For additional feedback and thoughts from your side, you can use the comment boxes at the end of each section to provide further insights.

The researcher undertakes to keep any individual information strictly confidential and retain the anonymity of all participants. The responses will be analysed holistically and remain in the possession of the researcher, so as to not prejudice any individual.

The data collected by means of this survey will assist in establishing a status quo for the leadership behaviour and existing worldview in the international airline industry and draw conclusions on a possible link between quantum leadership characteristics and successful organisations. You will not experience any negative consequences by completing this survey, nor will you be reimbursed or receive any incentives for your participation. Should you require any additional information or feedback on the research, please feel free to contact Ms Judith Bolt via e-mail: Judith.bolt@yahoo.de

Open ended Questions 1: Industry description

An industry describes the sector your business is operating in.

1. How would you describe your current industry life cycle? E.g. Growing/ Stagnating/Declining

2. Would you describe your industry as simple or complex? Please provide reasons for the given answer

3. What are the main factors influencing the complexity of your industry? E.g. government regulations, technology, price fluctuations, power of stakeholders, resistance to change, competitors, etc.

Open ended Questions 2: Leadership

Leadership is a process of exercising social influence on followers in order to reach a common vision and realizing goals by utilizing the full potential of individual and combined competencies.

4. Do you think that leaders in your organisation are sufficiently equipped to manage in a complex environment? If no, please provide reasons.

5. In your opinion, what are 3 major factors leaders are struggling with in their work environment? E.g. Employee management, work-life-balance, informed decision-making, etc.

6. In your opinion, what are the 3 most important leadership skills in order to sustain in a volatile/complex environment?

Comments

Dimension 1: Worldview/paradigm

A worldview/paradigm is the model of how ideas relate to one another within a framework, which serves as a pattern or model from which we form opinions and make decisions.

	To what extent do you as a leader:	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
1	Consider the organisation a holistic system in which all stakeholders equally influence the future organisational state?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	Hold a view that everything in the universe is interrelated and as such we need to understand organisations as similar constructs that operate in an interconnected state?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	Hold a view that the universe is self-organising and emergent and as such we need to understand organisations as emerging and self-organising entities?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	Hold a view that any environment is created through objective perception and subjective cognition and as such individuals in an organisation create a subjective reality?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C5	Hold a view that the environment consists of cause-and-effect relationships in which assumptions can be made about possible outcomes and certain scenarios are foreseeable?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	Hold a view that order naturally emerges out of chaos?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	Hold a view that the universe is eternally connected and as such we need to understand organisations in a holistic context rather than a single entity?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	Hold a view that complex problems can only be solved holistically instead of breaking it down into separate parts?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments

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Dimension 2: Organisational Structure

Organisational structure is typically defined by the hierarchical arrangement of lines of authority, communication, rights and duties of an organisation. Structure determines how tasks are grouped, divided and coordinated.

	To what extent do you as a leader:	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
C9	Hold the view that different levels of hierarchy assist in maintaining order within an organisation?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10	Hold a view that the organisational structure is influenced by the individuals working in it?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C11	Hold a view that the definition of clear roles and responsibilities within an organisation is necessary to achieve long-term goals and hold individuals accountable?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12	Hold a view that information should flow freely and be available to everybody at all times?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13	Hold a view that low managerial control creates a learning environment and provides structures that empower individuals for higher performance?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C14	Hold the view that organisational strategy follows organisational structure?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15	Hold the view that dynamic organisational structures are more effective in managing complexities?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments

Dimension 3: Values

Values refer to the principles or standards of behaviour that reflect moral standards, ethical behaviour and codes of conduct that are judged important in life by individuals.

	To what extent do you as a leader:	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
16	Value continuous personal growth in all areas of your life?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C17	Value being respected by people within your organisation?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18	Value your intrinsic values above organisational values?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19	Value a warm and empathetic organisational culture?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20	Value the input from others in holistic decision-making?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21	Value being recognised as being unique?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22	Value strong relationships with individuals?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C23	Value the feeling of power and control?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments

Dimension 4: Response to change & complexity

Change is defined as an act or process through which something becomes different in both positive and/or negative terms. Complexity refers to the state of being intricate or complicated with non-deterministic outcomes.

	To what extent do you as a leader:	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
C24	Consider an organisation a deterministic (= predictable) system?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25	Hold a view that change is initiated not only by external forces but also appears from within the organisation?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26	Hold a view that the triggers of change are unpredictable and complex and cannot be foreseen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C27	Hold a view that organisations can only react to change rather than proactively anticipate it?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28	Hold a view that constant change is inevitable and maintaining a state of equilibrium in organisations is hindering organisational growth?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29	Hold a view that complex structures contain patterns of order?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30	Hold a view that future outcomes/scenarios in complex structures cannot be foreseen or predicted as the exact behaviour of relationships and interdependencies between parts cannot be determined?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments

Dimension 5: Leadership skills

Leadership and management skills provide an indication of an individual's potential within the organisation.

	To what extent do you as a leader:	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
31	Avoid silo thinking and encourage the organisational design to be seen as part of the greater whole?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32	Encourage the combined active engagement of all members of an organisation to reach a state of shared decision-making?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33	Empower others to master personal challenges and growth?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34	Create an open environment for exchange and knowledge sharing?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35	Build rapport among members of the organisation and foster sustainable relationships?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36	Recognise the different motivational needs and unique patterns of individuals working in your organisation?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37	Encourage the co-creation of the corporate culture and values?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C38	Exercise a high degree of power over your employees?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39	Encourage innovative problem solving and conscious exploration of ideas?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C40	Hold a view that co-ordinating and supervising individuals contributes positively to the achievement of organisational goals?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C41	Hold a view that individuals should be treated equally?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42	Appreciate the uniqueness of individuals and recognize the necessity for individualized motivational techniques?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43	Hold a view that collective wisdom leads to greater results in complex problem solving than individualistic and role based decision-making?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C44	Hold a view that strategic planning assists an organisation in the informed decision-making	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	process about possible future scenarios?					
45	Hold a view that situations should be handled intuitively and creatively instead of purely strategically?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46	Hold a view that emotions, feelings and empathy within an organisation are important to create a positive environment and enable a constructive flow of positive energy?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments

Dimension 6: Leadership style

Leadership style refers to a certain way of providing direction, implementing plans, and motivating people exhibited by leaders in the political, business or other environments.

	To what extent do you as a leader:	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
47	Hold a view that leaders should emerge out of situations instead of being appointed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48	Hold a view that group dynamics have the power to appoint leaders?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49	Hold a view that leaders are intuitively “chosen” by their followers?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50	Hold a view that passion and enthusiasm are important in initiating change within individuals and systems?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51	Hold a view that leading by example contributes to the successfulness of an organisation?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C52	Hold a view that work-and private life should be separated in a business environment?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
53	Hold a view that leaders should act authentic and open-hearted at the workplace in order to be accepted by followers?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

C54	Hold a view that only a few individuals should be in control of the decision-making process instead of involving entire groups?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Comments

Personal details

Job Title:

Age:

Sex (M/F):

Highest qualification:

Name of organisation:

Current position in the organisation:

Management Experience (in Months, Years):

Annexure B: Interview protocol

Determining an alternative leadership paradigm in a volatile environment

I. Opening

(Establish Rapport) My name is Judith Bolt and I'm conducting a research on the emergence of a new form of leadership paradigm – which I refer to as quantum leadership paradigm. Since I am placing my research in the international airline industry and you are working for an international airline company, I would appreciate if you share some of your insights on leadership and organisational design with me.

(Purpose) I would like to ask you some questions about your worldview, your perception of the airline industry and leadership skills necessary to cope in this volatile business setting. I would like to learn more about your opinions and compare it to other results from my Quantum Leadership Survey which is stipulated among

A large number of airline managers worldwide.

(Motivation) I hope to use this information to draw conclusions on the status quo of leadership behaviour in the international airline industry and eventually suggest a shift in leadership thinking in order to become more sustainable as an organisation in that volatile industry.

(Timeline) Answering the interview questions should not longer than one hour.

(Ethics) All the information provided from your side will be treated as confidential and are not handed over to third parties. Your participation is completely voluntary and you can exit the interview at any point.

(Transition) Let me begin by asking you some general questions regarding your position in the company and management experience.

II. Body

A. (Topic) Demographic information

1. What is your position in the organisation?
 - i. How long have you been doing your job?
 - ii. How much experience did you have before you entered that position?
 - iii. Are you enjoying the responsibilities and challenges that come with your job?

Transition to the next topic (From what I have researched so far, you are working in a very volatile industry that deals with a lot of challenges and continuous change. I would like to find out how you would describe your industry.)

B. (Topic) Industry related questions

1. How would you describe your industry?
2. Do you think that your industry is more complex than others?
 - i. Have you worked in different industries before?
 - ii. What makes this industry more complex than others?
 - iii. In your opinion, has it always been this complex or is this a more recent development?
3. What do you think are the triggers that make your industry especially complex?
 - i. If you have to name the top three reasons for the complexity of your industry, what would those be?
 - ii. Do you feel appropriately equipped to manage these complexities?
 - iii. What do you think would help you to improve managing those complexities?

Transition to the next topic (Every person is different in dealing with certain situations and challenges. It often relates to their worldview and how they perceive the organisation in which they are working. I would like to find out more about your personal worldview and how you perceive the current environment.)

X. (Topic) Worldview/paradigm

1. Do you think that you as a leader of an organisation are solely responsible and accountable for the success of the organisation?
 - i. How much does the power of other stakeholders influence the success of the organisation?
 - ii. Is the organisational environment created by the individuals working in it and therefore highly subjective or is it created by top management?
2. Do you think that an organisation is interconnected with its environment and internal and external events have an equal impact on the future organisational state?
 - i. Do you believe that an organisation always needs to be considered in context of its environment instead of a single operating entity?
3. Do you believe that organisational problems should be solved holistically or rather broken down in separate parts to find the root cause thereof?
 - i. In your experience, what has been more successful in your own organisation?
 - ii. What is your first instinct on how to solve problems?
4. Do you think that order can be found and established in any chaotic situation?
 - i. Do you prefer order over chaos?
 - ii. How do you manage and solve a chaotic situation?

Transition to the next topic (The organisational structure is an important part of achieving organisational goals and provides insights on how the individuals are being managed. Therefore, I would like to learn more about your personal perception of a good organisational design.)

Δ. (Topic) Organisational Design

1. Do you think that remaining order in an organisation is of utmost importance in order to be successful?
 - i. Are clear roles and hierarchical levels beneficial in maintaining order?
 - ii. Do you think that the organisation would fall in a state of chaos if employees are not managed and monitored by supervisors?

2. Do you think that any kind of information should be freely available to all employees?
 - i. Is it better, in some instances, when employees do not know the long-term goals and strategies of an organisation? Especially when the industry resides in a declining phase?
3. Do you think that dynamic structures are better suited to react to change and manage complexities?
 - i. Are individuals in your organisation equipped to be flexible and step out of their ordinary work roles to perform other tasks if need being?
 - ii. Do you have a diversified skill set available in your organisation that would enable dynamic structures?

Transition to the next topic Now that I have learned more about your opinion on organisational structure, I would like to come back to your own personal values and how you picture yourself within your organisation. Therefore, I would like to ask a few questions concerning your personal values.

E. (Topic) Values

1. Who created the company values?
 - i. What are your organisational values?
 - ii. Were employees involved in the creation?
 - iii. How did you formulate the values for your organisation? What was most important to you?
2. Do you value your intrinsic values over the organisational values?
3. Do you value a warm and welcoming work environment where individuals feel comfortable and do not have to dissimulate themselves?
4. Do you appreciate the opportunity to personally grow in your work environment with the help of those who are below your hierarchical level?

5. Do you value your organisational status and being responsible for others?
 - i. Do you like being in control of situations and to be able to exercise power?

6. Do you value good relationships to all of your employees?
 - i. Is it possible, in your opinion, to foster strong relationships with everybody in the organisation or should managers rather be concerned of building relationships with important strategic partners?

Transition to the next topic (I think that living organisational and personal values is important in order to be equipped to deal with complexities of the work environment and that they play a major role on how individuals react to change and complex situations. In my next topic, I would like to ask some questions regarding the response to change and complexity and find out more about your standpoint.)

Φ. (Topic) Response to change and complexity

1. Do you think that an organisation is deterministic (=predictable)?

2. Do you think that change can be triggered at any given time and cannot be foreseen by individuals working in an organisation?
 - i. Are organisations in a position where they can only react to change and complex situations or can change be anticipated from within?
 - ii. Are your employees open for change or do you see a certain resistance?
 - iii. Do you think that keeping the organisation in a constant unchanged state, the potential for learning and growth is minimized?

3. Do you personally like to change things or rather stick to known procedures?

4. Do you think that any complex problem has a solution and can be solved?
 - i. While solving a complex problem, do you think it is possible to consider every potential constant that might have an impact on that problem?

5. Is strategic planning an important task in your organisation?

- i.* How often do plans need to be changed because of unforeseen events that influence/change the original plan?

Transition to the next topic (Since you as a leader not only play a crucial role in leading the organisation through times of change but also managing individuals in your organisation, I would like to know what kind of leadership skills you personally possess and what you consider as most important in your role.)

Γ. (Topic) Leadership skills

1. Do you think an organisation should act as a big collective where all individuals have an equal stake?

- i.* Do you encourage good relationships among employees and try to avoid departmental-thinking (silo-thinking)?
- ii.* Do you believe in shared decision-making and actively engage with employees?
- iii.* Do you think that all individuals in an organisation take responsibility to create a positive and strong corporate culture?

2. Do you as a leader recognize the uniqueness of each individual?

- i.* Do you empower individuals according to their needs to master personal challenges and grow in the organisation?
- ii.* How do you identify individual needs in your organisation?
- iii.* How do you motivate employees?

3. Do you believe in the concept of learning-by-doing for employees?

- i.* Should situations be handled intuitively and creatively rather than strategically?
- ii.* What happens if employees make mistakes?
- iii.* Is the co-ordination and supervision of employees beneficial in achieving organisational goals?

4. Do you think that emotions, feelings and empathy for others help to create a positive work environment?

- i.* Do you think it is a sign of weakness as a leader to show emotions?
- ii.* Is it unprofessional when decisions are based on emotions and feelings instead of rational thoughts?
- iii.* Do you think that your own emotional state of mind/well-being influences your behaviour in the work place?

Transition to the next topic (Last but not least, I would like to ask a few questions regarding your thoughts on leadership styles.)

H. (Topic) Leadership styles

1. Do you think that any individual can take over the role of a leader in the right situation?
 - i.* Does a leader need particular skills in order to lead people?
 - ii.* Do individuals naturally look for someone to follow and intuitively decide who they want to follow?
 - iii.* Should leaders be appointed by superiors or chosen by the people who work with them?
2. Does a leader need to be authentic and truthful in order to be accepted by followers?
 - i.* Do you think that a positive attitude is important to initiate change within individuals and systems?
3. Do you think a leader should lead by example and be a role-model to followers?
4. Do you think that true leaders are born or that good leadership can be learned?

Annexure C: Consolidated Interview protocol

Determining an alternative leadership paradigm in a volatile environment

III. Opening

(Establish Rapport) My name is Judith Bolt and I'm conducting a research on the emergence of a new form of leadership paradigm – which I refer to as quantum leadership paradigm. Since I am placing my research in the international airline industry and you are working for an international airline company, I would appreciate if you share some of your insights on leadership and organisational design with me.

(Purpose) I would like to ask you some questions about your worldview, your perception of the airline industry and leadership skills necessary to cope in this volatile business setting. I would like to learn more about your opinions and compare it to other results from my Quantum Leadership Survey which is stipulated among a large number of airline managers worldwide.

(Motivation) I hope to use this information to draw conclusions on the status quo of leadership behaviour in the international airline industry and eventually suggest a shift in leadership thinking in order to become more sustainable as an organisation in that volatile industry.

(Timeline) Answering the interview questions should not longer than one hour.

(Ethics) All the information provided from your side will be treated as confidential and are not handed over to third parties. Your participation is completely voluntary and you can exit the interview at any point.

(Transition) Let me begin by asking you some general questions regarding your position in the company and management experience.

Iç. Body

I. (Topic) Demographic information

1. What is your position in the organisation?

R1: Network Performance Manager in Istanbul

R2: Network Performance Manager in Brno (Czech Republic)

R3: I'm currently employed as the global productivity manager at Global Load Control which is part of Global Tele Sales and Lufthansa.

R4: Network Performance Manager in Istanbul

R5: Senior Project Manager

R6: Network Performance Manager in Cape Town

R7: I'm the centre manager in Cape Town which means I'm responsible for one centre out of the three centre network. I'm employed with Global Load Control which belongs to the Lufthansa group.

i. How long have you been doing your job?

R1: Almost one year in this position (8 years in the same company as a lower level manager)

R2: 5+ years

R3: I've been employed with the company for 8,5 years. The management position as Productivity Manager I'm doing for 4 years.

R4: Almost 4,5 years.

R5: 14 months

R6: 12 months

R7: For approximately a year. I'm in the company for close to 7 years. I started as a load control agent so the normal entry level job and then became Duty Manager 3 years later. From Duty Manager, I became a network performance manager and from there I became the position as Centre Manager.

ii. How much experience did you have before you entered that position?

R1: I have lots of management experience in my current and also in previous companies.

R2: Entrepreneurship experience

R3: I had no management experience before I entered my current position.

R4: I'm working almost 8 years in the airline business

R5: 18 months

R6: 4 years experience of Management Position (Key Account)

R7: I became Duty Manager in 2010 for a year, and then I became Network performance manager for 2 years. So my total management experience before my position as CM was three years.

iii. Are you enjoying the responsibilities and challenges that come with your job?

R1: Yes, most of the times.

R2: Yes.

R3: Yes. I have a lot of independence and I have a lot of freedom to make decisions and that is what keeps the job interesting.

R4: The responsibility part is quite a challenge in my job, but I do like to have this duty, so I am happy about the challenge also.

R5: Yes, I do as you grow through challenges.

R6: Yes.

R7: Yes, it's a very challenging position. So there is a lot of stress involved and a lot of day to day urgency. But ingeneral yes, I'm enjoying the responsibilities that come with the job.

Transition to the next topic (From what I have researched so far, you are working in a very volatile industry that deals with a lot of challenges and continuous change. I would like to find out how you would describe your industry.)

9. (Topic) Industry related questions

1. How would you describe your industry?

R1: The Airline industry is very dynamic, innovative and has big growing opportunities with lots of new competitive companies, but the industry expects sustainable productivity and success.

R2: Dynamic, complex, sensitive, safety oriented

R3: The airline industry is very volatile due to the high dependency on the oil price and it's quite a competitive market due to the Gulf carriers They are causing a lot of difficulties for the big European and also for the American carriers. So, it's a very challenging industry to be in. For us at Global Load Control it's not that difficult at the moment because we solely provide service to Lufthansa and as long as Lufthansa is flying there will be work for us. So in that weird and challenging industry, we are quite save until such time when the aircrafts

will do the load sheets themselves. By then we would have to find a different niche of what service we can possibly provide to Lufthansa which would add extra value.

R4: The airline industry is very dynamic and challenging from a cost point of view. There is a need for a quick decision process, when changes happen and a high customer focus. In my opinion there is also a lot of business opportunities in order to improve current situations for airlines/stations etc.

R5: It is the airline and aviation industry. We as a ground handler are responsible for everything what happens with loading the aircraft plus cleaning and equip the aircraft. We belong to an airport company but all our clients are global airlines.

R6: Constantly changing on a daily basis. Cost driven.

R7: I would describe as very tough, very competitive and I would also describe it as very volatile and obviously very globalised.

2. Do you think that your industry is more complex than others?

R1: It depends on the other industries, but its more complex than most other industries in my opinion.

R2: Not all.

R3: It is one of the most complex ones but other industries face other or similar challenges.

R4: Every industry has its own complexities.

R5: Yes, I do.

R6: Yes.

R7: It's difficult to say it's more complex than others because every industry has its own complexities. I do believe that the airline industry is a very unique industry, so I wouldn't say it's more complex but it's in its own way very unique.

i. Have you worked in different industries before?

R1: Yes.

R2: Yes.

R3: I have worked in the automotive industry before where we produced headlights for cars but that industry also was under a lot of challenges due to production being moved to cheaper countries like Asia.

R4: Yes, retail and gastronomy.

R5: Yes, I have worked in the hospitality industry before.

R6: Yes.

R7: No, I haven't.

ii. What makes this industry more complex than others?

R1: Because the Airline industry becomes very globally and has many major effects, which are internal and external. Also the main point is the "Human" effect. Everyday you can get new experience.

R2: Connectedness.

R3: (No answer provided)

R4: Different factors can influence our business, some of them can't be directly avoided, hence the industry needs to adapt. (Strike, political situations and natural environment)

R5: It is all about safety. If one or more departments do not do their job this can be safety critical and a danger for the flight passengers. In the hospitality industry you have other risks but not as major and complex than in our industry now.

R6: Everything in the aviation industry is based on safety. Worldwide Partners (internal and external) contribute to this safety. To understand every departments processes and constantly check how to change or improve your processes to achieve the optimal outcome (PDCA)

R7: (question has been skipped)

iii. In your opinion, has it always been this complex or is this a more recent development?

R1: It develops more than before, due to technological innovations never stops and Airline services are raising for passengers and also for other companies. Airlines will respond as much as possible to the requests from customers.

R2: Complexity was always there, the only thing which is changing, are options when the resources are tight.

R3: I think it has always been complex. But the thing is due to the increased competition Lufthansa has to adapt more quickly than before and that is a challenge itself which Lufthansa is not very good at. They have a lot of good ideas but it takes them too long to put them into effect and that's where we potentially loose our advantage over the other carriers.

R4: I just think there are more market players and there is a consolidation of companies which can exist in the market.

R5: It has always been that complex due to thousand people flying every day. From the first moment the industry was a complex field.

R6: I would say yes but due to the technical development the turnaround time for processes increased dramatically which is difficult to monitor. You have to increase your intervals to ensure everything is still in order.

R7: I think it's difficult to say. I think the complexities increased because the whole world has kind of changed to a faster pace with new technologies and all these things in the last couple of years and because of the recent economic changes within the middle east – I think all these events had a greater impact on the industry which made it more complex in the last couple of years. But that being said, I only have worked in the industry for a few years and that is only my personal impression of how things have developed.

3. What do you think are the triggers that make your industry especially complex?

10. If you have to name the top three reasons for the complexity of your industry, what would those be?

R1: Human effect – Competitions – Technological innovations

R2: Security, connectedness, time

R3: Oil price, safety and I think also the relations of the countries because in order to fly good routes you have to negotiate with the countries where they are allowed to fly over and all of that. I think that adds some more complexity that none of the other industries have so much

R4: See above

R5: Safety and punctuality, but also keeping people up to date on a constant base, 100% focus on what you are doing, double checking your work

R6: People, demands from different stakeholders, Process Environment

R7: I think mostly because the airline industry is very dependent on a lot of factors. I'm talking now mostly about global economic situations that have a very high impact on the industry and are very difficult to predict. And I think that's the main factor that makes it very volatile. On the other hand it's also very fast pace industry. There is a lot of change; there is a lot of things you have adapt to. A lot of things we have to stay ahead of in order to remain relevant within the industry and airline. So I think those two factors combined make it very volatile.

ω. Do you feel appropriately equipped to manage these complexities?

R1: Not always. I still develop my strengths and facilities.

R2: Yes, most of the time.

R3: Yes.

R4: On my level there is an issue with transparency about the business development. I am more advised to execute the company strategy and processes without being part of the business decision making process. The crux I face is the fact, that I have to react and hardly can act in advance.

R5: I do. If I do struggle with a topic I will include an expert to understand the problem and subject.

R6: Yes.

R7: Yes, I mean I do believe that you can't stand still. I believe that you have to keep learning every day and you to improve your skills in order to be able to meet the challenges. But generally, I do feel that I am appropriately equipped with the necessary skills.

ωι. What do you think would help you to improve managing those complexities?

R1: Education, courses, trainings, experiences and knowledge sharing can help for it, but talent is the most important part of that.

R2: High skilled and flexible team (skills and flexibility), less limitations and more resources

R3: I'm not so sure about the training. It's just that it would be helpful to have more time to focus on the managing side of things. Because currently we still have a whole lot of other things we need to take care of, so I can't devote so much time to the pure managing as I would like to and I'm sure if I would have more time for that I could improve things better. Have more time to look into the future and work on the vision, and work on the team and these facts that will improve your output. If you just had more time so that you can practice better what you have learned. It's often you go to the training and then you come back and then it's like rush, rush, rush, more topics, more projects, etc. and the training is already halfway forgotten.

R4: I would need to have regular feedback and information about the company development, strategy changes, business and political decision within the company.

R5: You need a good structure and experts in the different fields who feel responsible for their tasks.

R6: Structure and to have as much overall knowledge as possible.

R7: Well, I think there are always things that you can do as an individual but generally I do feel that I have been constantly learning, constantly improving, and constantly getting training that help me develop my personal perspectives. I don't think from a time perspective I could have done more with the time that I've had but I do believe when looking forward that there are still things that one can improve on.

Transition to the next topic (Every person is different in dealing with certain situations and challenges. It often relates to their worldview and how they perceive the organisation in which they are working. I would like to find out more about your personal worldview and how you perceive the current environment.)

K. (Topic) Worldview/paradigm

1. Do you think that you as a leader of an organisation are solely responsible and accountable for the success of the organisation?

R1: No.

R2: Yes.

R3: Yes. If you can motivate your team to fulfil the tasks at hand and everybody does that, then you/the company will succeed. It's a manager's responsibility.

R4: As a leader I am some kind of role model. In my responsibility I try to be exemplary for the people I work with. I try to adapt different leadership approaches in order to serve and support the colleagues in their individual development and work duties. So I see myself more as a person who supports the success with my individual contribution.

R5: I am not the only responsible person for the organisation, but I am responsible for my department.

R6: No.

R7: Solely responsible? No, I don't believe that. I do believe that everyone working for the company plays a role and a part in that. I do believe that success can only be achieved through team effort. I don't think that any person neither me nor anyone else is solely responsible for the success of the company but that being said, I obviously do accept some responsibilities in my position to lead the organisation to success.

i. How much does the power of other stakeholders influence the success of the organisation?

R1: In our department its not possible to succeed without other stakeholders' cooperation. We are worldwide a very big team.

R2: It is a joint effort.

R3: A lot. The magical P-word (referring to politics in an organisation). Personal agendas of certain people in certain positions with power have in my point of view a big influence on the success of a company. I've seen many times where decisions are being forced into reality because so said something where it wasn't based on facts and then the people have to live with it and make it work, but it wasn't a founded decision. So that happens quite often and that's the biggest factor which causes tension and failures.

R4: Customer or stakeholder management is very important, but I see a need to keep customer satisfaction in balance with the satisfaction of our staff. If we focus too much on stakeholder satisfaction and lack in the way we manage the satisfaction of our staff, we might create a difficult work environment. Customer and staff satisfaction goes hand in hand.

R5: It can influence the success immense. In our projects, most our stakeholders are clients as well. If they want to change the way the project is going, they can easily influence the outcome and success of the project which also relates to the success of the organisation. Nevertheless the internal structure and culture of the organisation cannot be touched by our external stakeholders.

R6: It works both ways ad depending on the topic.

R7: I think it depends a lot on the individual stakeholder. Obviously there is certain stakeholders that have a lot more influence than others and there is stakeholders who have less influence. Generally, every stakeholder of a company has some influence on the success of it, it's just varying degrees of influence so to speak. In my opinion, internal stakeholders have the highest influence on the success of the company. But also external stakeholders have influence.

ii. Is the organisational environment created by the individuals working in it and therefore highly subjective or is it created by top management?

R1: Not all, but most of the environment is created by the top management.

R2: It is created by the individuals working in that environment.

R3: I think it's both a little bit because the people working in a company always create their little world but then there is also the culture that is desired by the management which people adhere to. But it's maybe more playing by the rules and the real culture is created by the people working in an organisation.

R4: In my opinion, the top management is responsible to create organisational work environment where individuals can develop and be successful, based on their strength and talents they have. It's like a drawing. The top management delivers the frame, where the individuals can paint and create their own picture.

R5: The environment is mostly created by the top management and by the airport company who is our mother company.

R6: Self-created with the aim to be self-organized

R7: I think that both do. I think top management obviously plays a part and there is also a certain conscious decision to be made what kind of environment one wants to have within the organisation and what environment is most advantageous to achieve the goals of the organisation. At the same time, every individual also has a certain power to influence the environment around them. It depends very much on how much detail one wants to get but I mean at the end of the day, it's not random; it is not completely out of one's control to build that environment. For example, let's say top management has a certain vision of what the desired environment should look like then they would set up the "right" values and the "right" vision for the company accordingly that would further that kind of environment. That would then influence the hiring practices of the company which would determine what kind of individuals are hired into the company and those individuals would nurture the environment further from there.

2. Do you think that an organisation is interconnected with its environment and internal and external events have an equal impact on the future organisational state?

R1: Yes it is highly interconnected and internal events have a bit more impact than external events (depends on different cultural environments)

R2: The modern approach is taking the external events into account, the traditional companies tend to be less opened.

R3: Since it's people working in an organisation, the external factors always have an influence on the future state of the company, so I think it's both things.

R4: Definitely.

R5: Yes, I would say that the three have an impact on the future of an organisation. All of them should be balanced.

R6: Yes.

R7: I definitely think that the company is connected with its environment and that changes in the environment influence the company and vice versa. In terms of the degree, I think it's difficult to say. I also think it depends on the industry and what the company actually does. So I don't think I would be comfortable in making a blank statement of which one has more influence. I think at our particular company looking at GLC, I think that internal events have a greater impact on our organisational state than external ones. But that's very subjective.

i. Do you believe that an organisation always needs to be considered in context of its environment instead of a single operating entity?

R1: Yes, environmental effects cannot be avoided, because most of industries are not monopoly anymore.

R2: Yes, everything is somehow connected.

R3: Yes.

R4: I like to use the word balance in the way we should approach these tasks. The way I understand business it would be a fatal approach focusing too much on specific entities.

R5: No, I think an organisation can be considered by the environment AND their single operating entity.

R6: Yes, definitely.

R7: (Question has been skipped)

3. Do you believe that organisational problems should be solved holistically or rather broken down in separate parts to find the root cause thereof?

R1: Depending on the situation both approaches can be useful.

R2: For success both approaches are needed.

R3: Well, they should be looked at holistically and then find the root cause to it. Because just looking at one aspect of a problem will most likely not bring you to the root of the problem.

R4: I see a duty to evaluate this. It could be both.

R5: I think it depends on the organisational problem. But to find the root cause is always important and needed by problems as you need to make sure that the same problem doesn't happen again.

R6: Depending on the problem. Holistic is preferred as I can include everything in the process, but too often there is not enough time to evaluate and forecast the outcome. Also due to complexity of the different departments it is always a benefit to have those “specialist” onboard.

R7: Again, a very difficult question. I do believe that both approaches are valid and I do believe that both approaches have merit in certain situations. I don't think that you can always look at problems holistically and I don't think that you can look at problems doing a root cause analysis only. I do believe that both approaches have merit in the right kind of situation. Some things need to be solved holistically and some things need to be solved by looking at the root cause.

i. In your experience, what has been more successful in your own organisation?

R1: Both can be successful. I prefer to use both style if needed.

R2: There is no one way approach; it is more about the right balance.

R3: There is the desire to look at problems holistically, so we want to do it holistically and we are doing root cause analysis and stuff but I think at some instances we are too quick to point out problems without having looked at the bigger picture. So some problems we do get right from a holistic point of view, but many times we jump back into old habits and just find the obvious and hope that it is the root, but might only be a symptom.

R4: I have to refer to what I said above. I made the experience that I had to evaluate the root cause in order to understand, if it was a general problem or just an isolated knowledge gap. What I can add is the fact, that I see more success in the individual approach than in a general, holistic one. When you tackle something in a general approach, there will be also individuals which fall through and don't get the point.

R5: To break it down into separate parts.

R6: Holistic with the participation of specialist (even if external)

R7: In our specific organisation I think the root cause analysis has had a lot more success than holistic thinking. I would like to add though that I think that's because our organisation definitely lacks the ability to stay with something for a long period of time, kind of finish something from start to end and that's very important when it comes to holistically solving something. You cannot have it in your mind for a week and then move on to the next problem. When you want to solve something holistically you need to have that kind of foresight to really stick with it for a long period of time. If that skill is not there, holistic problem solving becomes problematic.

ii. What is your first instinct on how to solve problems?

R1: First of all searching the background of the problem, empathy and trusting to my experience and knowledge (listening of others opinions are also very important).

R2: Holistic.

R3: Well, I like to look at all things and where it comes from and what can we do to prevent it. Not to cure it.

R4: I need to understand the problem, the root causes and why it was happen.

R5: To define the problem, to analyse where the problem is coming from, to decide what is the best approach to solve the problem and come up with an action plan.

R6: Think about at least three solutions for it.

R7: That's really a difficult question to answer. I think it depends on the situation and the problem you have in front of you. I don't think I prefer one or the other. I do believe that holistic problem solving has a lot of potential. Especially in terms of sustainability and in terms of having a global organisation where you can maybe tackle something on a broad spectrum but I really don't think that one option is better over the other.

4. Do you think that order can be found and established in any chaotic situation?

R1: Yes.

R2: Chaos is a matter of perception.

R3: I'm king of my chaos. I think so. There is order in anything.

R4: Yes, but order is not always necessary.

R5: Yes, I completely agree. You can always create order in chaos. Even in a chaos situation but you need to first get an overview what is happening.

R6: Yes it can be an order in a chaotic situation, but it has to be trained (you go back to default and focus on the absolute necessary)

R7: I do think that order can be found and established in a chaotic situation, I don't necessarily think it has to be. I think that some chaos can be beneficial sometimes.

i. Do you prefer order over chaos?

R1: If order is meant as regularity, then yes I do.

R2: Both are serving a different purpose. I don't have a personal preference.

R3: I really like order, but I'm a very chaotic person at times. I like to clean up, let's call it that way.

R4: I prefer what would add more value to the company.

R5: I definitely prefer order.

R6: Order.

R7: I guess I prefer order over chaos.

ii. How do you manage and solve a chaotic situation?

R1: Staying calm and making decisions not in a panic.

R2: By recognizing the order in it.

R3: Well, if I didn't create the chaotic situation I trust that it will sort itself out and that it comes back to order at some point. If I created the chaos, I try to create order myself.

R4: I streamline and guide the process to success. Let me explain, there might be individuals which are working perfectly in an environment of chaos. Within the process I support the individual in a way that I structure the chaos, create and maintain the work environment he/she can successful and manage everything around that we achieve the goal and target.

R5: Bring the involved team members together and start structuring the next steps and define responsibilities. You cannot do this without the team. You need to involve everyone to make you team aware of what is happening.

R6: Think logical and rational and get structure asap.

R7: From a workplace perspective I think I tend to break problems down and look at their root causes. Chaos has a way of looking overwhelming when you look at it holistically and it has a tendency to overwhelm people when they look at the chaos as such. Once you break things down and look at individual parts, it usually makes it a lot easier to see the order and help people to see through the chaos.

Transition to the next topic (The organisational structure is an important part of achieving organisational goals and provides insights on how the individuals are being managed. Therefore, I would like to learn more about your personal perception of a good organisational design.)

A. (Topic) Organisational Design

1. Do you think that remaining order in an organisation is of utmost importance in order to be successful?

R1: No. Organisations sometimes need chaos to be creative.

R2: No. Skilled people can handle different designs simultaneously.

R3: Yes. You need some order in order to give a framework for the people so that they know where they must go.

R4: I see a need of consistency within the organisation in order to be successful. Too much changes within this order have a negative impact in my opinion.

R5: Yes, I think order is important to be successful. Order doesn't mean you cannot be flexible and have spontaneous decisions. It means to be structured and having an overview what is happening in your team and in the environment around you.

R6: Yes.

R7: Again, I think it very much depends on what your organisation is about. I think working in the airline industry retaining order and avoiding the chaos is very, very important especially in the safety relevant environment we are working in. If you have a community of artists, for example, working together creating something, then maybe some chaos might be beneficial and too much order might actually hinder the creativity in the process. So I think it depends a little bit where you are from and what you do, but yes, in our industry order is beneficial.

i. Are clear roles and hierarchical levels beneficial in maintaining order?

R1: Clear and fair roles and regulations would be beneficial.

R2: Only in linear approach. This is rather viable for a less dynamic environment.

R3: No, not necessarily. I mean there will always be hierarchies in terms of one person will be a leader and there will be followers. That is for me also some sort of hierarchy but I don't feel the need to have 10 steps in between and 10 people signing off on something that could have been done by the second person. That's a waste of time and creating waste – hierarchies because it doesn't add value.

R4: Roles yes, but there I would prefer a flat hierarchy level.

R5: Yes, I think so. If you know what you are doing and the roles are defined you will be able to share your expert knowledge with the rest of the team. If the organisation isn't using the hierarchical levels it needs also to be structured properly otherwise you will lose overview of what is happening.

R6: Yes, it gives stability but also makes it not agile (good mix is preferred).

R7: Well, I mean there is a lot of management theory out there these days about hierarchies and hierarchical thinking and whether these are beneficial or not beneficial. In terms of retaining order, I think that key roles and hierarchies make it easier. I'm not necessarily saying that it is the best approach but it's definitely easier.

ii. Do you think that the organisation would fall in a state of chaos if employees are not managed and monitored by supervisors?

R1: In our company, yes it will. It is also very close connected to the cultural structure how much it can be chaos.

R2: No, matter of perception.

R3: Maybe at first but I think it would automatically fall into some sort of structure where people take on different responsibilities and tasks and form some sort of system that will allow for order. I think there might be a limit to the size to that structure with amount of people being in it.

R4: As I have said above, I think it is important that roles are clearly designed and executed by the individuals within the organisation. This would separate responsibilities and everyone has to full fill their task. In order to keep everything balanced there is definitely a need for managing and monitoring activities. But this I see as part of an organisational structure, a duty to be fulfilled.

R5: No, but only if it is defined properly and everyone knows what he has to do and still somehow reports to someone.

R6: No, because I trust in them.

R7: I think there is a lot of theory about self-governing workspaces and in terms of systems theory of how things balance out if you kind of just through in the responsibilities and wait for the results. I definitely think that our organisation can survive in a state of chaos. I don't think that less management and supervision automatically equals the same increase in chaos.

2. Do you think that any kind of information should be freely available to all employees?

R1: Only necessary info should be freely available.

R2: Yes.

R3: Any kind of information? Well, that's a difficult question what people share and what they don't share. I mean let's use the salary as an example. I think that could be shared if you have a fair structure. Then there is no point of arguing why the CEO must earn X and agents starting earn Y. Also how the company is sharing, I'm not so sure about disciplinary things because that's very personal and that shouldn't be really anybody's issue except between you and the company. I think one can share a whole lot more information than we are currently doing and that would also increase transparency but not everybody will understand it correctly what the information tells you. So it might give wrong ideas so that there would

have to be a good way of how to share the information so that it doesn't get misinterpreted. That would involve, I think, management.

R4: Transparency is important yes. I have the believe, that employees would be more committed and identify themselves with their company, when we have a free information flow.

R5: Yes, organisational information definitely. Employees need to know where the company is standing and what is happening. Being transparent will avoid rumours and rumours cause problems and a negative environment.

R6: No.

R7: Yes.

i. Is it better, in some instances, when employees do not know the long-term goals and strategies of an organisation? Especially when the industry resides in a declining phase?

R1: It's good for employees to know the goals and strategies, so they also can look from big picture and can manage the small problems (if the strategy and long term goals have benefits for all employees too).

R2: No. A good manager would be able to gain profit and value also in declining phase (same case as buying stocks, it is possible to make money when they rise and also when they fall).

R3: (Respondent already answered that question in different sub-question)

R4: A clear no.

R5: No, I think it is not right to keep information away from your employees.

R6: Yes, because you have to focus on managing the organisation but at the same time you should be transparent to a certain extent = creates credibility even in such a situation.

R7: I believe that this comes back to one of the original questions in terms of the vision and translating the vision down to your employees. I think if your employees are not aware of the long-term goals and what the company is trying to achieve within, let's say, the next 10 years I don't really see how they could ever buy into your vision or into any long-term measures that you implement because they would lack the corresponding information as of where you are trying to go. I do believe in treating your employees as adults. I do believe in transparency and openness when it comes to these things. So no, I definitely think that all of your employees should be aware of and contribute to the long-terms goals of the organisation.

3. Do you think that dynamic structures are better suited to react to change and manage complexities?

R1: Yes it is.

R2: Yes.

R3: Yes.

R4: Yes.

R5: Yes, they are more prepared to react on changes.

R6: Yes.

R7: Generally, I do believe that dynamic structures are more suitable to effective change management, if you would call it like that. I do believe if your structures are too rigid that it will hinder the organisation's ability to adapt to change.

i. Are individuals in your organisation equipped to be flexible and step out of their ordinary work roles to perform other tasks if need being?

R1: (No response provided)

R2: Individuals yes, all no.

R3: I think we are trying to establish that. We are interested in very flexible and versatile employees to be able to give more than one task to the person at hand exceeding the standard job description. And I think when we are all flexible and agile, we are able to form our workforce in that direction.

R4: The possibility would be there, but we don't engage that.

R5: Yes they are able to step out of their ordinary work if the organisation has the need.

R6: Partially.

R7: I would say to a certain degree, but not necessarily to a degree that I personally would hope for. I don't think that in our organisation people are completely inflexible and don't do it at all but I do think there is a lot of room for improvement.

ii. Do you have a diversified skill set available in your organisation that would enable dynamic structures?

R1: (No response provided)

R2: Yes, however too stiff and therefore is not working as it is expected.

R3: I think there is a whole lot potential among our people. Maybe it hasn't been used to its full extend yet but it is work in progress.

R4: We have, but at the moment it's not utilized.

R5: We do have diversified skill set but I do not think we are using it properly.

R6: Yes, busy developing more people.

R7: Yes, most definitely. We actually do have a very diverse workforce with a lot of skill sets. Our organisation has a great advantage. Looking at the area of load control, it is nothing that one has to study for which makes hiring fairly easy. This leads us to have very different people with very different backgrounds and skill sets and a lot of different cultures working in an environment that is relatively new to them depending on when they started with us. We have very few employees that have done a similar kind of job for a different company. Most people came from completely different areas and then kind of came together to do load control. That means that we actually have a competitive advantage when you look at other companies because there is immense diversity when it comes to the skill set of our employees.

Transition to the next topic Now that I have learned more about your opinion on organisational structure, I would like to come back to your own personal values and how you picture yourself within your organisation. Therefore, I would like to ask a few questions concerning your personal values.

M. (Topic) Values

1. Who created the company values?

R1: By top management with employees engagement.

R2: Management

R3: Top management

R4: Cluster management

R5: Top management

R6: All stakeholders/employees

R7: Top management. So the executive level.

i. What are your organisational values?

R1: Reaching personal and company's same goals like high standards, responsibility and best solution orientation etc... Collecting of organisational management experience.

R2: Guidance

R3: Responsible, solution oriented, self-awareness, recognition, agility, excellence as standard, believe in people, push boundaries, credibility, unified diversity

R4: Responsible, solution oriented, self-awareness, recognition, agility, excellence as standard, believe in people, push boundaries, credibility, unified diversity

R5: Self-awareness, responsibility, credibility, recognition, solution-oriented, pushing boundaries, excellence as standard, agility, belief in people, unified diversity

R6: (same as the above)

R7: (same as the above)

ii. Were employees involved in the creation?

R1: Yes, they are. All employees' strengths should be engaged.

R2: Yes, management level.

R3: We had a management conference where we were trying to come up with what our values are going to be and we involved managers that developed from the bottom and brought in their experiences and knowledge about every aspect of the company. And I think it was also a new thing for us to do.

R4: No.

R5: Not as far as I know.

R6: Yes.

R7: No, not at all.

iii. How did you formulate the values for your organisation? What was most important to you?

R1: Responsibilities, excellent standards, believe in people, solution oriented and trustful work ethic.

R2: (No response provided)

R3: To make GLC visible on paper. To get an idea of what GLC is all about. So if you read the values, that you get an idea of what kind of people work for GLC and what and how we would like to be.

R4: We applied workshops, personally I try to be a role model for the company values. Believe in people is most important to me.

R5: I include the values in decision making and in the way I am with my team and people. Self-Awareness as this has also an impact of how you deal with your team and the people around you. Solution oriented.

R6: Authentic.

R7: That I can't really answer. What I can tell you is the approach that was taken. So the values formulated by the top level, they all went away on a management conference by

themselves. So I would say that they isolated themselves. Then they formulated the values by themselves and they came back to the organisation and told everyone what they were. At the end of the day it just leads to something that is on a piece of paper. I mean if there is no co-creation in the entire process and there is no input and buy-in, I think with many people it makes them a little bit adverse towards the values because they did not have a say in it which they maybe thought they should have had. Others just see it as a piece of paper. I mean if something is just presented to you, no matter what it is, it will never really feel like something that you own. It will always feel like something that someone else owns and you were only informed which I do think makes it very difficult. Of course, looking at the number of values we have (and we have a lot more values than most companies) there will be automatically be some in there that speak to you as a person and that would you have created if you were part of the process and maybe to those you can relate a little bit more but I do believe that it still gives employees the feeling that half of them believe in the company and its values and the other half does not.

2. Do you value your intrinsic values over the organisational values?

R1: Organisational values are over intrinsic values, but also sometimes they cross each other in same level.

R2: The organisational values are the same as my own values. If they would be different I would go with intrinsic values over organisational values.

R3: I haven't compared it, but I think so.

R4: I try to balance them.

R5: I think that if you work for an organisation your personal values and those of the organisation have somehow to be quite similar. Otherwise you are not taking your own values serious and they are useless. If it comes to the team I usually use more my instinct values and if it comes to organisational decisions and make use of both.

R6: Yes, because it makes me what I am.

R7: Yes. In order for you to be successful and happy in the organisation, I do think that your intrinsic values and the organisational values kind of have to overlap and match because otherwise you will never feel comfortable enough to succeed in that place. Generally I believe, and I think that is valid for most people, intrinsic values come first. And when they contradict – intrinsic values and company values – I do think that you will always stick with your intrinsic values in terms of integrity.

3. Do you value a warm and welcoming work environment where individuals feel comfortable and do not have to dissimulate themselves?

R1: Yes.

R2: Yes.

R3: Yes, I like a warm and welcoming environment.

R4: Yes.

R5: Yes, I definitely do.

R6: No.

R7: Yes. I think it has a huge impact on the motivational levels. I think it also has a huge impact on your work ethic because at the end of the day, if you are really comfortable and you are who you are, it is a lot less draining as if you have to pretend to be someone else. I do believe on an organisational level, it has a huge impact your overall activity, motivation and environment.

4. Do you appreciate the opportunity to personally grow in your work environment with the help of those who are below your hierarchical level?

R1: Yes I am, everybody has different backgrounds and strengths (Talent, skills, knowledge) and so I'm still learning from others.

R2: Yes.

R3: Yes, I do.

R4: Yes, I do.

R5: Yes, I do.

R6: Yes because you can learn from everyone independent of their position.

R7: Yes, I do. Personally I get a lot more gratification through the people that work with me such as my employees, if you want to call it like that. And their success and happiness and trust in my abilities is more important to me than praise from the other direction.

5. Do you value your organisational status and being responsible for others?

R1: (No response provided)

R2: I have no attachment to neither of them. Both are creation of human illusion. That is more from Marxism approach ... already passé

R3: Yes, I probably don't do it active enough sometimes. I don't realize what importance I have in the organisation – that people come for advice, take me seriously and listen to what I have to say. I can probably use that more to the benefit of the company.

R4: I'm happy when I can help.

R5: Yes, I am.

R6: Yes, because I can help the organisation to be successful.

R7: I do value being responsible for others. For me personally it is very gratifying if I can live up to my personal standards while being responsible for others. My organisational status does honestly not really matter to me. Where exactly I'm placed within the hierarchy from a structure point of view does not really influence how I see myself or how I see my work responsibilities.

i . Do you like being in control of situations and to be able to exercise power?

R1: Yes I do, as I have my strengths on managing people, solving problems etc... I like to have chance to use my abilities on my position. I also like to take responsibilities for others, for employees and for my colleagues.

R2: I like to be in control to create safe environment, but I also like to let it go, to see new opportunities. I love power; however I am practising it for the purpose of finding equilibrium.

R3: It depends. I'm not a control freak. I like to trust the people I give tasks to that they fulfil them to their best abilities and I like to see the results and not how they get there. So I don't like to use my power over situations. I like to use the power with everybody – not me on top.

R4: This is not important for me, neither to be in control nor exercise power.

R5: I like to be in control of situations – something I have to work on as I think it is important to hand over responsibility to others too. Using power only if need but this is very seldom. I believe in being open and prevent the situation in which you need to use your power level.

R6: Yes, I like it.

R7: No, not really. I much prefer co-creation over exerting power.

ii . Do you value good relationships to all of your employees?

R1: Yes.

R2: I value all relationships.

R3: Yes.

R4: Yes.

R5: I do value good relationships.

R6: No, and I don't think I have to.

R7: Yes. Well, I do value good relationships to all of my employees as far as possible. I believe that if you manage a certain number of people, like over a 100 people in my case, I

think it's not possible to have perfect relations with everyone. I also believe that from an authority perspective, it wouldn't make you good at your job if you had perfect relationships with everyone because then I think there would be things slipping by just from a statistical perspective.

iii. Is it possible, in your opinion, to foster strong relationships with everybody in the organisation or should managers rather be concerned of building relationships with important strategic partners?

R1: It is very difficult to have good relationships with all employees, especially if they are from different culture and from different background, but I do my best to have standards to all of the employees and trying to keep as much as possible good relationships. Strategic partners are very important for every organisation and should be keep good relationships if possible, but others should not be ignored too. A good management must have as much as possible good relationships with all of them. The relationship level could be different between each personal.

R2: To foster strong relationships there needs to be value add for both sides. Unfortunately, it is not always the case.

R3: Well, the important strategic partners are probably not a bad thing to have because of that magic p-word. But nevertheless, you are still an individual and you can build as many relationships as you want in the organisation.

R4: Again I have to balance that. It is utopia to believe having strong relationship with everyone. Otherwise I can't just have a strong focus on strategic partners.

R5: I think you cannot build strong relationships with everyone in a big company. I agree to the second one.

R6: You should be accessible for each and every one to the same extend and it is just beneficial to have a big network on strategic partners and if you use it smart it supports you all the way.

R7: No, I definitely think that managers have to try and build that kind of strong relationship with everyone. Of course, in every environment and especially in an organisational environment, there will be some strategic relationships that you have to place and emphasize on because you need them to be successful within your own department. That being said, I do believe that you have to try and build good relationships with everyone.

Transition to the next topic (I think that living organisational and personal values is important in order to be equipped to deal with complexities of the work environment and that they play a major role on how individuals react to change and complex situations. In my next topic, I would like to ask some questions regarding the response to change and complexity and find out more about your standpoint.)

N. (Topic) **Response to change and complexity**

1. Do you think that an organisation is deterministic (=predictable)?

R1: Regularly it should be deterministic, but it is also depends on environmental facts, politics, macro-economic risks, how economical strong the organisation is, general culture (experience of people, governments...), safety of organisation's future etc...

R2: Can be

R3: No, you can try but things will always happen differently as you anticipate. You can plan and you can have a good estimate, but in the end things will always be different.

R4: Not in general for our business.

R5: Yes, I think so.

R6: Yes.

R7: I do believe that organisations are predictable if you know the system and the environment well enough. So if you are kind of in tune with the environment your organisation is operating in, I do believe that if you through a variable in there, whatever that might be - some kind of change, some kind of problem, some kind of adjustment, etc. – you can to a certain degree foresee the impact of that change.

2. Do you think that change can be triggered at any given time and cannot be foreseen by individuals working in an organisation?

R1: Organisations should be ready for all sudden changes, due to global very dynamic facts, but regularly it should be planned and all risk managements have to be done, before it will be triggered.

R2: Yes, to some degree.

R3: See above, question already answered.

R4: Both can happen in my opinion.

R5: Yes I think it is possible but I think employees shoul be made aware of this.

R6: Yes.

R7: I think you can foresee it most of the time. There are kind of situations that just kind of pop up in any system that you as a human being just did not see coming. So there is change

that can just kind of appear without you having predicted it but I think that's part of human nature. If you could predict everything, I think you would be the perfect manager. I don't think that's realistic or possible.

i. Are organisations in a position where they can only react to change and complex situations or can change be anticipated from within?

R1: (No response provided)

R2: The change can be anticipated by organisations as well.

R3: I would like to believe both because we do try to give importance to the change topic to make sure we develop in that regard and constantly evaluate how we are doing work and stuff. I think we can still improve there but I would say we are trying to be active.

R4: Again both.

R5: It can be anticipated.

R6: Both ways, depending on the environment you are in.

R7: I think both. I think sometimes you have to be reactive. Sometimes some change just happens and then you have to react to it and manage it. And the kind of change you are looking for you can definitely initiate. 100%.

ii. Are your employees open for change or do you see a certain resistance?

R1: Sure there are some employees, who are not welcome for changes and also some of them are resistance against the changes, if legally they do not create a bad circumstances. This depends on their work ethic, their experience and also on their ages. Older employees often (not always) are not comfortable with innovations or changes.

R2: There is always a degree of resistance by nature. It is human defend mechanism. In the end, it is up to the approach, trust, knowledge, understanding, experience, ...

R3: There is always the ones that are totally resistant and then the ones who are open for change.

R4: I made the experience, when we have anticipated the change with the employee involvement, we faced mostly no resistance. When there was a lack of involvement, it was opposite.

R5: Both. It depends on the change and how you as a project manager deal with it.

R6: Overall seen they are open for change.

R7: I definitely see a certain resistance. I think it is within human nature to be resistant to change to a certain degree. Some people more, some people less. Generally I think humans don't like change, especially if they are comfortable in the place where they are right now. That being said I don't think that people in our organisation are especially change resistant. If you have a proper change management in place, you can successfully implement and manage the change but yes, there is definitely some resistance.

iii. Do you think that keeping the organisation in a constant unchanged state, the potential for learning and growth is minimized?

R1: Yes, especially in Airline business, all organisations have to be organized for upcoming changes and innovations. Otherwise sustainable success cannot be forced.

R2: For organisations yes; for individuals no.

R3: Yes. With no change, there is no learning.

R4: Yes, I do.

R5: Yes I think so. Change is important for individuals and organisations to learn and grow.

R6: Yes, definitely.

R7: Yes. I also think that your opportunities for success are minimized. If there is no change in your organisation, it's basically only a matter of time before you become irrelevant in your environment. In today's age change is absolutely necessary. Especially for growth and learning it is essential.

3. Do you personally like to change things or rather stick to known procedures?

R1: I'm very result oriented, if procedures are successful, they should be followed strictly, if not they should be changed.

R2: Both. From holistic point of view each routine becomes a change and each change becomes a routine. These are two opposites of the same coin.

R3: I like procedures but I like new things too. I like to constantly change and improve the way we do things.

R4: Need to be balanced again. It makes sometimes sense, sometimes it doesn't.

R5: I like both. If it is a good way to do something, stick to it. If you find a better solution, change it.

R6: If you want to learn you have to change.

R7: Personally, I definitely like to change things. Change is essential. But obviously there is also change to a person that is rather unwelcome. I think everyone can relate to that statement in one way or another when you are really honest to yourself. It might be little things like moving into a different office or working with a new computer system or whatever. I think there are certain things that you would just prefer to stay the same because you are comfortable with them and you like it the way it is. But again, that's just a part of your own little change resistance. But change in general I do prefer over old procedures.

4. Do you think that any complex problem has a solution and can be solved?

R1: Yes I think it can be, even some solutions are sometimes not easy to implement. (Maybe I didn't experience any problem without a solution, till yet☺).

R2: Theoretically yes.

R3: Yes, it might not be the result we would like, but I'm sure there is a solution to every problem.

R4: Let me say it like this, there is not always a solution, but it can be managed.

R5: Yes.

R6: Yes.

R7: Yes. I think you might need different approaches in order to be able to solve every problem but I think anything can be solved.

i. While solving a complex problem, do you think it is possible to consider every potential constant that might have an impact on that problem?

R1: It should be considered, if you don't have any time pressure or any other high important facts, which pushes you to ignore some constants.

R2: Each action is a correction or development of a previous one.

R3: Unlikely. That would require your view being totally holistic and being an expert in every field which is highly unlikely the case.

R4: This is unrealistic to believe for me.

R5: You definitely have to look at it and evaluate how big the impact can be.

R6: NO you can't to 100 percent, because nobody can predict an outcome especially if you work with so many different people.

R7: No. I mean generally when you use words like “every”, I don’t believe that you can consider “every” constant. What you should strive for is to account for as many as possible constants and the ones you did not think of to master as good as you can when they appear.

5. Is strategic planning an important task in your organisation?

R1: Yes it is.

R2: Yes.

R3: Yes.

R4: Yes.

R5: Yes, it is.

R6: Yes.

R7: Yes, it’s definitely an important task.

i. How often do plans need to be changed because of unforeseen events that influence/change the original plan?

R1: It happens sometimes, due to not enough knowledge/experience sharing or due to weak communication between stakeholders or even between different departments in same organizations.

R2: A plan is for me not a definite state, it is more wished forecast which has to act like a boat on the sea. Otherwise the waves will pull it down.

R3: Monthly.

R4: I see a connection with changes within the management team. So if there would be consistency, we would have less changes.

R5: Too many times.

R6: Quite often (on a small scale on a daily basis).

R7: Quite frequently. And again, I also think that is important to keep in mind when you do strategic planning; especially on the long-term level. In my opinion, in today’s age and this ever changing environment around us I don’t think any five year plan, for example, can really be rolled out over five years. I think most five year plans need to be reviewed every six months and need to be adapted to the ever changing environment around us. If you have a certain strategic plan and you say that is what I want to achieve without changing the plan, I think you get to fixated on sticking to that and become inflexible. It’s very important to review, adapt, and change in strategic planning in order to be successful. Strategic planning is super important because you need to know where you want to go. At the end of the day that is what strategic planning is all about. Where do you want the organisation develop to?

And strategic planning also lies out in this point at time what's the best way to get there. The goals of where you want to go rarely change, mostly it shows you the best suited path to get there – and that you just have to adapt.

Transition to the next topic (Since you as a leader not only play a crucial role in leading the organisation through times of change but also managing individuals in your organisation, I would like to know what kind of leadership skills you personally possess and what you consider as most important in your role.)

O. (Topic) Leadership skills

1. Do you think an organisation should act as a big collective where all individuals have an equal stake?

R1: Yes.

R2: No, that is not supporting diversity which is supporting dynamics and change.

R3: That would be nice, ideally. But for our organisation at this stage unrealistic.

R4: No, individuals are different and have to be treated like this.

R5: Yes – their responsibility for the company grows through this. But you need to define the stake properly.

R6: NO you cant but you should use your natural leaders to support you.

R7: I think that in a perfect world it should be like that. I also think that we don't live in a perfect world and that humans are not perfect.

i. Do you encourage good relationships among employees and try to avoid departmental-thinking (silo-thinking)?

R1: Yes, it is our culture in our organization to have good relationships with employees without departmental thinking. We are in same boot.

R2: Yes.

R3: Yes, we have some initiatives where we are trying to get away from silo-thinking and cross-functional jobs.

R4: Yes, I do.

R5: Yes, I do.

R6: YES I have to because otherwise I am not successful or not achieve my goals. Therefore I have to encourage.

R7: Yes. I do believe that good relationships are essential to produce the work environment that you want to have. The kind of relationships that people have to each other, influence

how they feel about their work place and how comfortable they are. Especially between departments in our organisation, most challenges we face don't just affect one specific department. They often have an interdepartmental impact and if you don't have good relationships between the departments and they can't work together to overcome the challenges, the organisation would have a big problem.

ii. Do you believe in shared decision-making and actively engage with employees?

R1: In many situations and operational issues, yes I believe, but not always. You as a leader or manager, have to decide when or what can be shared with employees.

R2: Yes.

R3: Yes.

R4: Yes, but there is a need to consider the different roles within the company and accordingly decisions need to be made, shared or individual.

R5: Yes, I do.

R6: Yes.

R7: Yes. Shared decision making and engaging with employees is the key to getting their buy-in for the things you would like to achieve. A lot of times, especially in our organisation, it is not given enough credit in terms of what people might have to offer to any kind of decision-making in regard of their experience and their skills.

iii. Do you think that all individuals in an organisation take responsibility to create a positive and strong corporate culture?

R1: Yes it starts with individual person, then team and in the end all the organization.

R2: Yes, in their diverse way.

R3: You hope so. I'm not sure if all of them are.

R4: They should, but it would be a challenging goal to achieve.

R5: Yes, I think so.

R6: Yes.

R7: No. I think ideally all employees should take responsibility to create a strong culture but not everyone does participate.

2. Do you as a leader recognize the uniqueness of each individual?

R1: Yes.

R2: Yes.

R3: Yes.

R4: Definitely.

R5: Yes, I do.

R6: Yes.

R7: Yes. Every person is unique and every person in their own way has something to contribute. However, I think it's a very difficult thing to stick to. We tend to judge people prematurely, we tend to classify people and put them into boxes. So it definitely is something that you have consciously to be aware of and try to achieve on a daily basis.

i. Do you empower individuals according to their needs to master personal challenges and grow in the organisation?

R1: Yes we are empowering (with limits) for their and company's needs.

R2: Yes.

R3: Yes.

R4: Very much.

R5: If the situation allows me – then yes.

R6: Yes, pushing boundaries is one of my most favourite value.

R7: I try to. I don't think our culture always allows it. I think it's a shortcoming of our organisation where people are not being empowered the way they could be. But personally, I do try my best.

ii. How do you identify individual needs in your organisation?

R1: With communicating and with focusing on individuals.

R2: Observation and openness

R3: Well, we are talking to the people and working closely together with them.

R4: In one-on-one talks

R5: One-on-one meeting, lunch dates – digging deeper.

R6: Talk to each other and be available to everyone. Most importantly listen.

R7: I guess that's differs from department to department. In my department it's a lot more difficult than in other departments because we do have shift work. In order to really identify the individual needs of people there is absolutely no other way than pure interaction; to get to know people. That becomes very difficult when you have a certain number of employees and a certain number of shifts where you don't necessarily get to interact with every employee on a regular basis.

iii. How do you motivate employees?

R1: There are different ways to motivate them. Sometimes with giving empower or having more personal conversations, big thanks, solving their difficulties or believing them or having more time on out of work times or doing outings together or giving support on difficulties during work etc....Some of time are motivated with salary increase or with presents.

R2: Different people, different approach.

R3: Well, by being there for them and believing in them that they will be able to do challenging jobs with good criticism and feedback. I listen what they have to say and being a role model.

R4: I value the individual, their strengths and positive attitudes/behaviours. I let them focus on their development points and don't point with fingers. I build up on relationship and care.

R5: Show them the shared vision – where are we and what have we reached so far.

R6: Each and everyone has his/her own needs and if I relate well I know them.

R7: I don't think that there is any kind of motivational measure that will affect every employee. This comes back to the uniqueness of every person and what works for you as an individual. People are motivated by very, very different things. This can start with small praise to recognition from their peers to monetary compensation to intrinsically motivated people to motivation by challenges, motivation by responsibility. It really differs from person to person.

3. Do you believe in the concept of learning-by-doing for employees?

R1: It helps too much and it depends on their learning style.

R2: Yes.

R3: Yes.

R4: To a certain extent yes.

R5: Yes, I believe in it.

R6: Yes, because the whole life is learning by doing.

R7: Different people have different learning styles. Me personally, I really believe in learning by doing mostly because it's the best way that I learn. That being said, I also believe that it doesn't suit everyone. There are different learning styles and for some people learning by doing doesn't work for them. They rather have a 300 page book that they can study before they do anything. Up to a certain degree you as a manager should try to accommodate as many learning styles as possible.

i. Should situations be handled intuitively and creatively rather than strategically?

R1: Depends on the situation, but both can be used.

R2: These are two opposite approaches. One is creating dynamics and supporting change another one is supporting stiffness creating passiveness

R3: I think there are a lot of situations that are more intuitive. I see a lot of strategic planning but also a lot of unforeseen things where we improvise.

R4: If we would have a balance here...perfect.

R5: It depends on the situation.

R6: It is like emotion vs. Rationality (both has its advantages)

R7: There is a merit to both approaches. I would rather opt for the intuitive approach.

ii. What happens if employees make mistakes?

R1: It depends on how important the mistakes are, but first the safety has to be guaranteed and usually the reason will be researched after and follows according to internal policies. In the end mostly employees gets support for avoiding same mistakes in the future (learning from mistakes).

R2: They should learn from it, however this varies from employee to employee.

R3: Well, I talk to them and I ask what happened and try to get the employee to see where the mistake came from and formulate a solution themselves how to prevent a similar situation in the future.

R4: There is an important point for me. Mistakes happen and I want the relevant person to reflect on it. The principle is that I can't change the past, but we can do it better in the future. That is the message I want to deliver if mistakes happen.

R5: Great. Learn from it and move on. Fall and stand up. Mistakes happen – we are all human.

R6: He has to take the responsibility and learn out if it.

R7: We try not to have a punitive culture. We try to have an open error policy where nothing really happens to the employees when they make mistakes but rather they get the support they need in order to avoid the same or a similar mistake in the future. But that being said, it is a very theoretical statement because to be honest, in our organisation we are not there yet. We would like to think that we have that non-punitive culture but at the end of the day if someone makes a mistake, in many situations there will be a more punitive-natured response. For example, being recommended by managers.

iii. Is the co-ordination and supervision of employees beneficial in achieving organisational goals?

R1: Yes, most of the time.

R2: Yes, however it depends on the style

R3: I mean, that will come automatically. I don't think you need to do it with an in-depth approach but through feedback you will see whether that works or not. You don't have to control what they are doing, but it should materialize through the feedback whether the solution that they have found created value.

R4: I like the perspective approach when it comes to coordination and supervision. In order to achieve goals, we have to look from different sides how we can achieve it. So I can help and support individual, when I observe and share my perspective.

R5: At the beginning yes but then employees need to see the importance of the goals themselves and make it happen.

R6: Yes.

R7: Yes, I do think it's beneficial.

4. Do you think that emotions, feelings and empathy for others help to create a positive work environment?

R1: Yes, but on emotional employees.

R2: Emotions, empathy and feelings are part of us. It is up to individual how much self-developed he/she is to use it for creation of positive environment.

R3: Yes.

R4: Yes, I do.

R5: Absolutely. Very important.

R6: Not always because if you allow too much of it, it blurs your decisions.

R7: Yes.

i. Do you think it is a sign of weakness as a leader to show emotions?

R1: Sometimes yes so they can feel that their feelings are important for managers too, but sometimes I don't think so. Sometimes managers have to stay strong and without showing emotions.

R2: No, rather opposite.

R3: No, it's a sign of being human.

R4: No, but I think it would be important how I deal with these emotions.

R5: It is not a weakness to show emotions but you need to control the emotions you show. To have an outburst is not advisable. To show emotions is absolutely fine but make sure they are not confusing or irritating your people.

R6: No.

R7: No.

ii. Is it unprofessional when decisions are based on emotions and feelings instead of rational thoughts?

R1: Rational thoughts should be followed in my opinion. If it helps to solve the problem or to reach the values, unprofessional decisions can be implementing, which is not my leadership style.

R2: Professionalism is one of the concepts which is telling us how to cooperate, however it does not mean that with other approaches and concepts we would not be able to achieve the same or even better outcome. There is no one key match. Some people are limited to achieve their greatness by their emotions and others are inspired by the same type of emotions.

R3: I think it depends on the situation. If it is a highly emotional topic then sure, why not?

R4: I want to be perceived as human also. And not every rational thought is the right one.

R5: Not unprofessional but you should also include rational thoughts even though you want to decided based on emotions and feelings.

R6: No.

R7: That's a very situational question. Most decisions obviously should be based on rational thoughts but that doesn't mean that you can't base a good decision on emotions or empathy. For example, an employee has a personal challenge and your decision based on empathy can help them out in one way or another, then I think it can be still a very good decision although it's not purely based on rational thought.

iii. Do you think that your own emotional state of mind/well-being influences your behaviour in the work place?

R1: No, it doesn't influence my behaviours in the work place. My emotional states or personal problems have to stay outside of the work place 😊

R2: Yes.

R3: I try that my personal life does not influence my work so that I have problems at home that I don't bring them to work. It might not always be possible but I try to focus on what I have to do.

R4: It does.

R5: Yes, definitely.

R6: Yes.

R7: I think to a certain degree it will influence anyone a little bit. But I do believe that people should be able to separate their private life and their work life to not let emotions drive you at work.

Transition to the next topic (Last but not least, I would like to ask a few questions regarding your thoughts on leadership styles.)

II. (Topic) Leadership styles

1. Do you think that any individual can take over the role of a leader in the right situation?

R1: (No response provided)

R2: Yes, the question is how efficient.

R3: In the right situation? Possible

R4: No, this is unrealistic.

R5: If this person has leadership talent – yes.

R6: No.

R7: Yes, in the right situation I definitely believe in such concept.

i. Does a leader need particular skills in order to lead people?

R1: Talent + Skills + Knowledge are needed for better people leading.

R2: A manager needs skills, a leader needs values and vision.

R3: No.

R4: Yes, certain talent is important.

R5: Social skills, empathy, motivating, emotional intelligence. Technical skills and knowledge is important too but emotional intelligence is more important to lead a team successfully.

R6: He must be human and have the acceptance to be the leader.

R7: No, particular skills are not necessarily needed.

ii. Do individuals naturally look for someone to follow and intuitively decide who they want to follow?

R1: Yes, in the beginning with intuitive, but after some experiences on situations more with observing.

R2: Yes.

R3: I think so.

R4: Humans are supposed to live in relationships, families, so I make a connection to business also. Yes in this case.

R5: Yes, they do.

R6: Yes, based on their belief and own values.

R7: Yes.

iii. Should leaders be appointed by superiors or chosen by the people who work with them?

R1: In my organization by superiors, would be more productive and realistic.

R2: It depends on the organizational structure.

R3: Good question. It should probably be a combined decision. Management maybe makes suggestions and then the people, or the other way around. But not leaving one party out because in the end it's the business where you want to achieve certain results and there might be some thinking why someone would suggest person A over person B and that could only be a better decision where all parties could have a say.

R4: People, no doubt.

R5: If the leader is also a manager then by the superiors. If it is a colleague it can be chosen by the people.

R6: Depends on what you want to achieve.

R7: That's a really good question. I think it depends on how in tune your employees are with the company goals and vision. Let me put it this way: if your employees would be completely in tune with your culture, vision and goals, then they would be best suited to determine the leader they would like to get them there. If there is a big gap between what the needs and the vision of the company are and what the employees perceive, then choosing a leader might take the organisation in a complete wrong direction. So in my opinion it would be nice if employees could appoint the leader they want but at our organisation and the status quo we have right now it wouldn't be feasible.

2. Does a leader need to be authentic and truthful in order to be accepted by followers?

R1: (No answer provided)

R2: Yes, that is part of being a leader.

R3: To be truly accepted, I think so. Yes.

R4: Yes.

R5: Yes, he has to be.

R6: Yes, definitely.

R7: Yes. *Everything else might give you some temporary success but on a long-term basis you will lose your followers if you are not authentic and truthful.*

i. Do you think that a positive attitude is important to initiate change within individuals and systems?

R1: *Sure, that attitude effects all participants and increases the believe in to the change.*

R2: Yes.

R3: *Certainly.*

R4: *Very much.*

R5: *Yes, I think so.*

R6: Yes.

R7: *Yes. If you have a negative approach you won't be very successful in the long-term.*

3. Do you think a leader should lead by example and be a role-model to followers?

R1: *Yes, because leaders are representative of the organisation and should be a role model for followers.*

R2: Yes.

R3: *I like to think so.*

R4: Yes.

R5: *Yes, absolutely.*

R6: Yes.

R7: Yes.

4. Do you think that true leaders are born or that good leadership can be learned?

R1: *They are born as a leader, but they can improve their leadership by learning and by increasing of skills.*

R2: *Both*

R3: *I think both. Some are just more that way but with a big open heart and a willingness to learn, you can also learn from a role model.*

R4: Leadership is a talent and can be performed to excellence. If you don't have this talent you might be able to manage. leadership but won't be excelled.

R5: True leaders are born. But if someone puts a lot of effort in then he or she can learn how to become a good leader.

R6: A good leader is born.

R7: I think both. Some people are really born. They have that kind of natural leadership gene and people just like to follow them. So I do think you can be born as a leader. But I also think that people who are not born with it can learn it and you are not unable to learn certain skills that can improve leadership skills. I think anyone can develop towards that kind of leadership.

Annexure D: Qualtrics Results for QLS

Last Modified: 06/06/2015

1. How would you describe your current industry life cycle? E.g. Growing/ stagnating/declining

Text Response	
Growing	
Growing slowly	
Declining.	
Growing...depending on the location for eg: Middle East where Emirates/Etihad/Qatar Airways/ Flydubai & Air Arabia are located. Today, majority of these carriers are dependant on 6th freedom traffic and their base location gives them the advantage of offering a wide network to cater to the 6th freedom traffic. Stagnating...for carriers eg: all European Carriers because these carriers are losing out on 6th freedom traffic and also, because of the economic downturn are not able to procure newer and fuel efficient aircrafts. Declining...for carriers eg: African carriers who are finding it difficult to compete with Middle Eastern carriers and are now going offline from quite a few countries and doing a code-share with the main competing carriers.	
growing	
growing	
Growing	
Growing	
Growing in a very competitive environment	
growing	
declining	
Growing	
declining	
Mia φ	
growing	
declining	
growing	
Growing	
we are very economic that's why I would describe it as "Growing"... we are working with our technology , which is non stop growing.	
Direct sales is a continually growing industry.	
Growing	
Taking on too much work to survive.	
Growing	
Telecom	
Growing	
Stagnating	
Growing and in my area i.e. Mid east and sub continent it is growing more then other wreas	
Growing	
stagnating	
declining	
growing	
Growing	

Statistic	Value
Total Responses	32

2. Would you describe your industry as simple or complex? Please provide reasons for the given answer.

Text Response

Complex. Aviation is a very complicated business at all levels. I can speak about finance and Accounting mainly.

Complex

Complex. A small regional airline is facing rising fuel, insurance, landing fees, government fees, etc. These very fees and charges make it so that a small airline cannot survive. Further, the traveling public are now expecting everything for nothing.

Very complex....because the style of doing business is changing drastically and fast. The new emerging carriers are growing at a rapid pace. to keep up with this pace, they are investing heavily into future aircrafts and technology to bring costs down. At the same time, the traditional National carriers of majority of the countries are losing out as they do not have the finances to match the new upcoming carriers. Except for Singapore Airlines, majority of the other carriers are struggling. Eg: Malaysian Airlines, Thai Airways, Philippine Airlines etc etc....same is the case in Africa, Europe, Asia and the Americas. Majority of the National carriers are funded by their respective Govts and now the Govts are finding it difficult to fund the airlines because it has become a bottomless pit. This situation has made the overall industry situation very complex as, literally, the big fish is eating the small ones. The big fish, to survive, has to grow bigger and the small fish is not able to match. This in turn has become a complex issue for the normal traveler as choices become less and there will be a time soon where price will be dictated by a few because they would have taken the maximum market share with their 380's and double/triple dailies literally making it look like a shuttle service with wide-bodied aircrafts.

complex. many factors affecting

complex, people are getting more awarenes and very much price conscious. we have to struggle to sell the product.

Complex

cimplex

The industry is very complex considerig the growing competition and desire to survive. The industry is constantly looking at better ways to grow and create a better competative edge.

complex

simple. i worked for a major airline

Complex man made

complex

Complex. Many different disciplines and operational challenges are combined with significant regulatory requirements from multiple agencies/governments.

complex

complex

very complex due to constant Change and high competition

it is complex because of new systems, new aircraft types, new rules.

I guess complex, because it's a multi-level marketing business and is commission-only.

Simple for the same reasons. You sell, you get commission. You recruit, your commission is greater.

Complex

Complex as the Rail industry is split and needs updating

Complex

Complex

Complex, many variables and a very competitive industry.

Complex, as the rules of the game change very rapidly. Both operational changes as the development in equipment and technology has rapidly developed and also sales and marketing with development in technology the distribution channels and booking reservation systems growing rapidly

Complex as technology and customers requirements are changing rapidly

complex because it involves a lot of actors (competitors) and the export regulation is complex
complex - multiple macro global markets drive demand for our products
complex
Actually it's not very simple. Because sometimes we have to face the customer complaint that we never heard of it.

Statistic	Value
Total Responses	30

3. What are the main factors influencing the complexity of your industry? E.g. government regulations, technology, price fluctuations, power of stakeholders, resistance to change, competitors, etc.

Text Response

The complexity is really inside the business itself, but as a service provider the hardest challenge is at competition level.

Fuel prices and competition

Government regulations, price fluctuations, competitors.

More than Govt regulation, which off-course is another main factor, power of stakeholders is one of the main factors bringing in complexity to the industry. Location is another factor. The location of Middle East is such that it literally becomes the center for transiting, thus saving precious time for a customer travelling from point A to C via B. At a time when security becomes a major concern, Govts are clamping down on visas and some countries do not even permit transit via their countries to a third country which is dissuading the customers from using these carriers. I think you will need to focus here on the countries that do not permit transits without a transit visa and you will easily come to a conclusion as to why the carriers of these countries are losing out to carriers of countries where these kinds of restrictions do not apply. Another reason to why a lot of traditional carriers are losing out is because of the change in dynamics. Today, countries like China & India are becoming economically strong creating a massive outflow for tourism. Visa restrictions and tight scrutiny plus the time taken to obtain visas will determine as to where a person would like to go on a holiday. Customers choose the easiest of options. Another factor is also the cost of a holiday or business travel. Europe is considered very expensive in terms of Hotel accommodation, transport, food etc etc. Service standards as compared with the Far East, which is much affordable, is considered bismal in Europe. Given these conditions, Europe for eg, will continue to lose out. Another example is Mauritius which only focused on French tourism. They did not bother to look elsewhere. Today, the French are bored going to the same destination again and again and are now looking at other destinations and the Mauritius Tourism Authority is very busy in finding other markets to keep their tourism economy ticking. The Middle Eastern carriers are thinking big and acting big whereas the traditional ones like BA, LH, AF, KL, SA etc etc have not changed their ways of thinking and are still trying to project their colonial image which is certainly not working. If you look at the mergers that have taken place in Europe in the last 5 years is a clear indication of a lot of these carriers not looking ahead and taking it easy with the biggies of the Middle East. At no time did they ever think that these carriers would grow so big, so fast that it has now become difficult or near impossible for them to match these carriers. I feel this is a phase where the skies belong to the Middle Eastern carriers. Everyone has their share of ups and downs. It is their turn now.

regulations, competitors, crisis

competitors, technology and resistance to change.

Government regulations

economy, oil, competition

1. World economy 2. Growing competition 3. Pricing structures 4. Fear of the unknown technology

regulations, governments and competitors

Government regulations and power of stakeholders

government, price

All of the above!

govermant regulations, tecnology

texhnology

fuel Prices, competition, safety

definitely the 1st thing is technology. Price would be 2nd factor.

see above

Government regulations and economy

Competitors, resistance too change, change for change sake. Cost.

Technology, Price Fluctuations, Competitors

Competitor
Customs regulations, costs
Stakeholders, Resistance to change, competitors and regulations
Technology has the largest influence in complexity and then the competition causing price war
Technology and customers requirements to consume and utilise the new technology
export regulations
macro economic conditions in regions of the world
govrmwnt regulxarion and competirors
Government regulations exactly.

Statistic	Value
Total Responses	31

4. Additional comments

Text Response
Above comments are based on our own environment where the customers are labor class/ khapia traffic.
I personally think the industry has a lot of place to grow provided the right people are in place to make wise decisions. Looking at the bigger picture and being proactive in the industry is one good way for growth.
In Africa government plays major role in Aviation where Government attention is based on person to person importance in the political party in power
no
There are many factors, different in various environments, the booming of LCCs is much more in Europe then in Middle East.
Nil

Statistic	Value
Total Responses	6

5. Do you think that leaders in your organisation are sufficiently equipped to manage in a complex environment? If no, please provide reasons.

Text Response	
Yes, they are.	
Yes	
Yes	
Yes, they are. They have been able to manage growth, control costs and offer fantastic infrastructure. Majority of the current leadership has come out from the BA, LH, QF pool. They have learnt from their past experiences and it is now paying dividends.	
yes, most.	
in my industry Leaders are well equipped to cope with the complex environment.	
Yes	
Yes	
In some cases not, because they just do not see the bigger picture and are not given the support to enhance the credibility of the industry. Leaders need to recognise the 'little people' who actually bring the bacon to the table and not consider them just as numbers. Good leadership skills by leading by example is the key.	
no, strange processes	
Senior leadership and mi-level managers are. We still have work to help our frontline managers and supervisors. Not only are we heavily regulated but contractual constraints exist with our frontline employees.	
no	
no, the various theories are well known but in practice it is very difficult to filter new theories through the Organisation.	
no ... for example we were not ready for new system altea, that's why we lost several customers.	
The management in my company has forgotten the human aspect of the work force and have gone too far in the hard years we have had to survive. It has made the work place toxic and unhappy.	
I do not think so. Most companies publish on their portals that people are their primary and most important of assets. But, when there is an issue, these are the same primary assets that are devoured. Business runs on numbers, yes, but it is the quality of attention that is bestowed on its people that eventually drive those numbers. Leaders may be exceptional in developing business strategies and excelling at the number game, but fail miserably in people management which eventually leads to the most complex and unmanageable situations to arise.	
No, lack of direction and communication on where the organisation is heading.	
Yes	
No, they have not evolved as fast as the market and as a consequence, the company is behind and is having a hard time to catch up	

Statistic	Value
Total Responses	19

6. In your opinion, what are 3 major factors leaders are struggling with in their work environment? E.g. Employee management, work-life-balance, informed decision-making, etc.

#	Answer	1	2	3	Total Responses
1	1	16	2	0	18
2	2	2	16	0	18
3	3	0	0	18	18
	Total	18	18	18	-

1	2	3
employee management	fiscal rules	business development
Too much going on	Lack of depth of staff	Work-life balance
Strict regulations	work-life balance	higher operating costs
How to offer a smooth trip and ensure tight security at the same time.	Govt regulations	Funding for new aircrafts & technology
Employee management	decision making	
time management	work life balance	need of the time
Project management	Employee management	Business skills
Unions	competition	scrutiny
Lack of transparency	Communications	A sound training plan
work life	poa	time
Lack of change management expertse at mid to lower leadership.	Regulatory restrictions/changes	Contractual obligations
all	all	none
change management	empowerment	flexibility
employee management	quality management	work-life-balance
Informed Decision making	Employee Management	Lack of focus on work life balance for self and subordinates
Employee engagement	Informed Decision making	Communication
Over complicated processes	One region making decisions that impact another	Time
competition	employee skills	

Statistic	1	2	3
Min Value	1	1	3
Max Value	2	2	3
Mean	1.11	1.89	3.00
Variance	0.10	0.10	0.00
Standard Deviation	0.32	0.32	0.00
Total Responses	18	18	18

7. In your opinion, what are the 3 most important leadership skills in order to sustain in a volatile/complex environment?

#	Answer	1	2	3	Total Responses
1	1	17	0	0	17
2	2	0	16	1	17
3	3	0	1	16	17
	Total	17	17	17	-

1	2	3
making decision	accept challenges	invest on people
Asking good questions	Connecting the dots	Not overmanaging staff
knowledge of an employee's capabilities/limitations	Access to the head of the company	the idea of teamwork
Man management	Cost management	Creative thinking/ Working on change all the time.
good knowledge	quick decision making	no doubt
good communication	decision power	honesty
flexibility	Discipline	luck
Empathy	Fairness	Organized and structured
trust	trust	trust
Transparency	Empathy/listening	Strong consensus skills
don't know	now	more
flexibility	trust	shared decision-making
Listening	respect	authority
People Management	Assertive Client Management	Data Driven Decision making
Trust	Honesty	Communication
sense of humor	decision making	people skills

Statistic	1	2	3
Min Value	1	2	2
Max Value	1	3	3
Mean	1.00	2.06	2.94
Variance	0.00	0.06	0.06
Standard Deviation	0.00	0.24	0.24
Total Responses	17	17	17

8. Additional comments

Text Response

A leader should have all those qualities which employees expect from them.

"If you view your services as flying between terminals, you missed the point. The process of moving passengers from the front door to the origin airport and from the destination airport to arrival site, lengthens their trip." Once you understand this concept, you can show how your product or service can add value to their expectations and their experience. David Shoenfeld of Federal Express

no

.

Employee engagement is crucial when implementing change. This cannot happen when there is no trust in the management.

Statistic	Value
Total Responses	5

9. To what extent, do you as a leader hold a view that:

#	Question	Strongly dis-agree	Dis-agree	Neither Agree nor Dis-agree	Agree	Strongly Agree	Total Responses	Mean
1	An organisation is a holistic system in which all stakeholders equally influence the future organisational state	0	5	2	9	4	20	3.60
2	Everything in the universe is interrelated and as such we need to understand organisations as similar constructs that operate in an interconnected state	0	1	5	11	3	20	3.80
3	The universe is self-organising and emergent and as such we need to understand organisations as emerging and self-organising entities	1	3	4	11	1	20	3.40
4	Any environment is created through objective perception and subjective cognition and as such individuals in an organisation create a subjective reality	0	2	7	8	3	20	3.60
5	The environment consists of cause-and-effect relation-	0	3	3	12	2	20	3.65

	ships in which assumptions can be made about possible outcomes and certain scenarios are foreseeable							
6	Order naturally emerges out of chaos	1	9	2	8	0	20	2.85
7	The universe is eternally connected and as such we need to understand organisations in a holistic context rather than a single entity	0	2	5	11	2	20	3.65
8	Complex problems can only be solved holistically instead of breaking it down into separate parts	1	7	4	6	2	20	3.05

Statistic	An organisation is a holistic system in which all stakeholders equally influence the future organisational state	Everything in the universe is interrelated and as such we need to understand organisations as similar constructs that operate in an interconnected state	The universe is self-organising and emergent and as such we need to understand organisations as emerging and self-organising entities	Any environment is created through objective perception and subjective cognition and as such individuals in an organisation create a subjective reality	The environment consists of cause-and-effect relationships in which assumptions can be made about possible outcomes and certain scenarios are foreseeable	Order naturally emerges out of chaos	The universe is eternally connected and as such we need to understand organisations in a holistic context rather than a single entity	Complex problems can only be solved holistically instead of breaking it down into separate parts
Min Value	2	2	1	2	2	1	2	1
Max Value	5	5	5	5	5	4	5	5
Mean	3.60	3.80	3.40	3.60	3.65	2.85	3.65	3.05
Variance	1.20	0.59	0.99	0.78	0.77	1.08	0.66	1.31
Standard Deviation	1.10	0.77	0.99	0.88	0.88	1.04	0.81	1.15
Total Responses	20	20	20	20	20	20	20	20

10. Additional comments

Text Response

Complex problems needs to be broken down in separate parts and then solved holistically depending on which problems need to be rectified. That is my way of thinking.

Remember – Businesses prompt and sell their products and services through interactions between them and their customers. This is done through advertising, online stores, the internet, or direct contact involving the sales team, communication face-to-face, or over the telephone. This approach to sales has become vital as our economy becomes more service and technology driven. The ongoing pace at which services and the growing complexity in technology is heading, will increase in lengthy and involved relationships between a business and their customers.

Statistic	Value
Total Responses	2

11. To what extent, do you as a leader hold a view that:

#	Question	Strongly Dis-agree	Dis-agree	Neither Agree nor Dis-agree	Agree	Strongly Agree	Total Responses	Mean
1	Different levels of hierarchy assist in maintaining order within an organisation	0	5	3	9	3	20	3.50
2	The organisational structure is influenced by the individuals working in it	0	0	1	9	10	20	4.45
3	The definition of clear roles and responsibilities within an organisation is necessary to achieve long-term goals and hold individuals accountable	0	0	1	8	11	20	4.50
4	Information should flow freely and be available to everybody at all times	0	2	1	8	9	20	4.20
5	Low managerial control creates a learning environment and provides structures that empower individuals for higher performance	0	5	7	6	2	20	3.25
6	Organisational strategy follows organisational structure	0	4	1	12	3	20	3.70
7	Dynamic or-	0	0	6	9	5	20	3.95

organisational structures are more effective in managing complexities								
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Statistic	Different levels of hierarchy assist in maintaining order within an organisation	The organisational structure is influenced by the individuals working in it	The definition of clear roles and responsibilities within an organisation is necessary to achieve long-term goals and hold individuals accountable	Information should flow freely and be available to everybody at all times	Low managerial control creates a learning environment and provides structures that empower individuals for higher performance	Organisational strategy follows organisational structure	Dynamic organisational structures are more effective in managing complexities
Min Value	2	3	3	2	2	2	3
Max Value	5	5	5	5	5	5	5
Mean	3.50	4.45	4.50	4.20	3.25	3.70	3.95
Variance	1.11	0.37	0.37	0.91	0.93	0.96	0.58
Standard Deviation	1.05	0.60	0.61	0.95	0.97	0.98	0.76
Total Responses	20	20	20	20	20	20	20

12. Additional comments

Text Response

Regarding free flow of information, I feel that it needs to be restricted to specified levels. We are in a very competitive environment and we would not like each and every employee in the organization to know what our growth strategy is for the next five years. On a macro level, it is fine but not on a micro level.

None

no

Statistic	Value
Total Responses	3

13. To what extent, do you as a leader:

#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	Value continuous personal growth in all areas of your life	0	0	2	11	7	20	4.25
2	Value being respected by people within your organisation	0	0	1	10	9	20	4.40
3	Value your intrinsic values above organisational values	0	1	4	9	6	20	4.00
4	Value a warm and empathetic organisational culture	0	0	4	8	8	20	4.20
5	Value the input from others in holistic decision-making	0	0	4	7	9	20	4.25
6	Value being recognised as being unique	0	1	5	9	5	20	3.90
7	Value strong relationships with individuals	0	1	2	8	9	20	4.25
8	Value the feeling of power and control	0	10	4	6	0	20	2.80

Statistic	Value continuous personal growth in all areas of your life	Value being respected by people within your organisation	Value your intrinsic values above organisational values	Value a warm and empathetic organisational culture	Value the input from others in holistic decision-making	Value being recognised as being unique	Value strong relationships with individuals	Value the feeling of power and control
Min Value	3	3	2	3	3	2	2	2
Max Value	5	5	5	5	5	5	5	4
Mean	4.25	4.40	4.00	4.20	4.25	3.90	4.25	2.80
Variance	0.41	0.36	0.74	0.59	0.62	0.73	0.72	0.80
Standard Deviation	0.64	0.60	0.86	0.77	0.79	0.85	0.85	0.89
Total Responses	20	20	20	20	20	20	20	20

14. Additional comments

Text Response

Feeling of power and control ruins it. In today's day and age, you need to earn respect from others with your management skills and not with power and control. It is definite that one day, the team will revolt as times have changed and we are not in a world where slave trade still exists.

Making all members feel valuable – Giving them self-confidence Taking time to work with people – Building relationships. Trusting and respecting your fellow team members – Creating mutual respect Giving fellow members all the attention they require. – Showing them true leadership and maturity. Being a role model – Showing credibility

none

Statistic	Value
Total Responses	3

15. To what extent, do you as a leader hold a view that:

#	Question	Strongly Dis-agree	Dis-agree	Neither Agree nor Dis-agree	Agree	Strongly Agree	Total Responses	Mean
1	An organisation is a deterministic (= predictable) system	0	9	8	3	0	20	2.70
2	Change is initiated not only by external forces but also appears from within the organisation	0	1	2	11	6	20	4.10
3	The triggers of change are unpredictable and complex and cannot be foreseen	0	9	5	5	1	20	2.90
4	Organisations can only react to change rather than proactively anticipate it	5	10	3	2	0	20	2.10
5	Constant change is inevitable and maintaining a state of equilibrium in organisations is hindering organisational growth	0	7	0	9	4	20	3.50
6	Complex structures contain patterns of order	1	2	6	11	0	20	3.35
7	Future outcomes/scenarios in complex structures cannot be foreseen or predicted as the exact behaviour of relationships and inter-dependencies between parts cannot be determined	1	8	2	6	3	20	3.10

Statistic	An organisation is a deterministic (= predictable) system	Change is initiated not only by external forces but also appears from within the organisation	The triggers of change are unpredictable and complex and cannot be foreseen	Organisations can only react to change rather than proactively anticipate it	Constant change is inevitable and maintaining a state of equilibrium in organisations is hindering organisational growth	Complex structures contain patterns of order	Future outcomes/scenarios in complex structures cannot be foreseen or predicted as the exact behaviour of relationships and inter-dependencies between parts cannot be determined
Min Value	2	2	2	1	2	1	1
Max Value	4	5	5	4	5	4	5
Mean	2.70	4.10	2.90	2.10	3.50	3.35	3.10
Variance	0.54	0.62	0.94	0.83	1.42	0.77	1.57
Standard Deviation	0.73	0.79	0.97	0.91	1.19	0.88	1.25
Total Responses	20	20	20	20	20	20	20

16. Additional comments

Text Response

Triggers of change can be foreseen in many areas. Yes, in some cases it cannot be foreseen as in the cases of civil wars etc or Ebola for that matter but even in these cases you can see it coming and can start preparing for the worst in case if you have to adopt changes in a hurry.

None

none

Statistic	Value
Total Responses	3

17. To what extent, do you as a leader hold a view that:

#	Question	Strongly Dis-agree	Dis-agree	Neither Agree nor Dis-agree	Agree	Strongly Agree	Total Responses	Mean
1	Silo thinking should be avoided and the organisational design should be seen as part of the greater whole	0	3	3	6	8	20	3.95
2	The combined active engagement of all members of an organisation to reach a state of shared decision-making should be encouraged	0	0	2	8	10	20	4.40
3	Leaders should empower others to master personal challenges and growth	0	0	2	2	16	20	4.70
4	The creation of an open environment for exchange and knowledge sharing is important	0	0	0	7	13	20	4.65
5	Building rapport among members of the organisation and foster sustainable relationships is important	0	0	2	8	10	20	4.40
6	The different motivational needs and unique patterns of indi-	0	0	3	6	11	20	4.40

viduals working in your organisation should be recognized								
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7	The co-creation of the corporate culture and values should be encouraged	0	1	1	10	8	20	4.25
8	A high degree of power should be exercised over employees	4	4	8	2	2	20	2.70
9	Innovative problem solving and conscious exploration of ideas should be encouraged	0	0	2	8	10	20	4.40
10	Co-ordinating and supervising individuals contributes positively to the achievement of organisational goals	0	2	7	8	3	20	3.60
11	Individuals in an organisation should be treated equally	2	4	3	3	8	20	3.55
12	The uniqueness of individuals should be appreciated and the necessity for individualized motivational techniques recognized	0	0	3	8	9	20	4.30
13	Collective wisdom leads to greater results in complex problem solving than indi-	0	0	4	6	10	20	4.30

	vidualistic and role based decision-making							
1 4	Strategic planning assists an organisation in the informed decision-making process about possible future scenarios	0	1	1	10	8	20	4.25
1 5	Situations should be handled intuitively and creatively instead of purely strategically	1	1	9	7	2	20	3.40
1 6	Emotions, feelings and empathy within an organisation are important to create a positive environment and enable a constructive flow of positive energy	0	1	2	6	11	20	4.35

Statistical	Silo thinking should be avoided and the organisational design should be seen as part of the greater whole	The combined active engagement of all members of an organisation to reach a state of shared decision-making should be encouraged	Leaders should empower others to master personal challenges and growth	The creation of an open environment for exchange and knowledge sharing is important	Building rapport among members of the organisation and foster sustainable relationships is important	The different motivational needs and unique patterns of individuals working in your organisation should be recognized	The co-creation of the corporate culture and values should be encouraged	A high degree of power should be exercised over employees	Innovative problem solving and consciousness exploration of ideas should be encouraged	Coordinating and supervising individuals contribute positively to the achievement of organisational goals	Individuals in an organisation should be treated equally	The uniqueness of individuals should be appreciated and the necessity for individualized motivational techniques recognized	Collective wisdom leads to greater results in complex problem solving than individualistic and role based decision-making	Strategic planning assists an organisation in the informed decision-making process about possible future scenarios	Situations should be handled intuitively and creatively instead of purely strategically	Emotions, feelings and empathy with in an organisation are important to create a positive environment and enable a constructive flow of positive energy
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Min Value	2	3	3	4	3	3	2	1	3	2	1	3	3	2	1	2
Max Value	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Mean	3.95	4.40	4.70	4.65	4.40	4.40	4.25	2.70	4.40	3.60	3.55	4.30	4.30	4.25	3.40	4.35
Variance	1.21	0.46	0.43	0.24	0.46	0.57	0.62	1.48	0.46	0.78	2.16	0.54	0.64	0.62	0.88	0.77
Standard Deviation	1.10	0.68	0.66	0.49	0.68	0.75	0.79	1.22	0.68	0.88	1.47	0.73	0.80	0.79	0.94	0.88
Total Responses	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20

18. Additional comments

Text Response

None
none

Statistic	Value
Total Responses	2

19. To what extent, do you as a leader hold a view that:

#	Question	Strongly Dis-agree	Dis-agree	Neither Agree nor Dis-agree	Agree	Strongly Agree	Total Responses	Mean
1	Leaders should emerge out of situations instead of being appointed	0	2	4	8	6	20	3.90
2	Group dynamics have the power to appoint leaders	0	1	7	7	5	20	3.80
3	Leaders are intuitively "chosen" by their followers	1	3	2	12	2	20	3.55
4	Passion and enthusiasm are important in initiating change within individuals and systems	0	0	1	10	9	20	4.40
5	Leading by example contributes to the successfulness of an organisation	0	1	1	6	12	20	4.45
6	Work-and private life should be separated in a business environment	1	4	6	3	6	20	3.45
7	Leaders should act authentic and open-hearted at the workplace in order to be accepted by followers	0	0	2	6	12	20	4.50
8	Only a few individuals should be in control of the decision-making process instead of in-	5	8	4	2	1	20	2.30

	volving entire groups							
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Statistic	Lead-ers should emerge out of situations instead of being appointed	Group dynamics have the power to appoint leaders	Lead-ers are intuitively “chosen” by their followers	Passion and enthusiasm are important in initiating change within individuals and systems	Leading by example contributes to the successfulness of an organisation	Work-and private life should be separated in a business environment	Lead-ers should act authentic and openhearted at the workplace in order to be accepted by followers	Only a few individuals should be in control of the decision-making process instead of involving entire groups
Min Value	2	2	1	3	2	1	3	1
Max Value	5	5	5	5	5	5	5	5
Mean	3.90	3.80	3.55	4.40	4.45	3.45	4.50	2.30
Variance	0.94	0.80	1.10	0.36	0.68	1.63	0.47	1.27
Standard Deviation	0.97	0.89	1.05	0.60	0.83	1.28	0.69	1.13
Total Responses	20	20	20	20	20	20	20	20

20. Additional comments

Text Response

Decision making will depend on the decisions to be taken. There may be a situation when half the group is for it and half is not. In these kind of cases, few individuals should take a final decision. Therefore, different styles needs to be practiced at different times. We cannot generalize this.

“Defining A Mindset” A set of beliefs or a way of thinking that determines one’s behaviour, outlook and mental attitude.
no

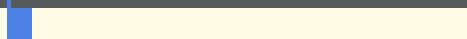

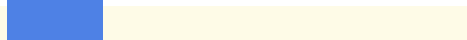


Statistic	Value
Total Responses	3

21. Job title

Text Response
Business development manager
Consultant
Special Operations Director
sspo
Director of engineering
President
Sales manager
Senior Manager
Safety Program Lead
ceo
productivity manager
Team Leader
Team Leader
Account Manager
Team Leader

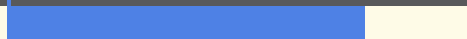

Statistic	Value
Total Responses	15

22. Age

#	Answer		Response	%
1	20-29		1	5%
2			4	20%
3	40-49		4	20%
4			7	35%
5	60 < older		4	20%
	Total		20	100%

Statistic	Value
Min Value	1
Max Value	5
Mean	3.45
Variance	1.42
Standard Deviation	1.19
Total Responses	20

23. Sex (M/F)

#	Answer		Response	%
1	Male		15	75%
2			5	25%
	Total		20	100%

Statistic	Value
Min Value	1
Max Value	2
Mean	1.25
Variance	0.20
Standard Deviation	0.44
Total Responses	20

24. Highest qualification

Text Response
Degree
Engineering Degree & 3 Masters Degrees
Experience in various management roles and decision making
PG in BA from Lancaster University - UK
Perf. Ops. Eng.
MBA
BA
Mba
Diplome in sales and marketing
Diploma
ceo
Master of General Management
Bachelor
BTEC MECHANICAL AND PRODUCTION ENGINEERING
Masters in Computer Applications
Graduate Certificate University
Degree
Master degree in French-American business

Statistic	Value
Total Responses	18

25. Name of organisation

Text Response
Weidlinger
Freedom Air
VFS Global
Vueling
PIA
Ryanair
Can-do Consulting
Currently Unemployed
Lufthansa Group
mag ga
Lufthansa
GLC
Bombardier Transportation
Emids technologies
Australia Post
Fujitsu
xxx

Statistic	Value
Total Responses	17

26. Current position in the organisation

Text Response
Manager
Esnior Advisor
Customer Service Manager
Consultant
Director
SSPO
Director
NA
Procumrement
ceo
team leader
Duty Manager
TEAM LEADER
Team leader
Account Manager
Team Leader
Sales Administration Department Manager

Statistic	Value
Total Responses	17

27. Management experience (in months/years)

Text Response
more than 10 years
47 years
12
30 years in Aviation...with BA & EK
>25 years
18YEARS
20 years
20
Over 35 years in the airline and contact centre industries
15 years
2
2 years
6 years
10 YEARS
3 years
5 Years
11 years
4 years

Statistic	Value
Total Responses	18

Annexure E: Ethics Approval



DEPARTMENT OF BUSINESS MANAGEMENT RESEARCH ETHICS REVIEW COMMITTEE

14 April 2015

Ref #: 2015_CEMS_BM_032

Judith Bolt

Student #: 39030434

Dear Judith Bolt,

Decision: Ethics Approval

Name: Judith Bolt – Principal Researcher (Judith.bolt@yahoo.de; 0764489686)

Proposal: A situational analysis of a volatile industry in order to determine an alternative leadership paradigm.

Supervisor: Prof René Pellissier

Qualification: Postgraduate degree

Thank you for the application for research ethics clearance by the Department of Business Management Research Ethics Review Committee for the above mentioned research. Final approval is granted for the duration of the project from the date of issue.

For full approval: The application was reviewed in compliance with the Unisa Policy on Research Ethics by the Department of Business Management on 14 April 2015.

The proposed research may now commence with the proviso that:

- 1) The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
- 2) Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the Department of Business Management Ethics Review Committee. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.
- 3) The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study.

Kind regards,

Prof Watson Ladzani
Chairperson of the sub-unit RERC
Department of Business Management
wladzani@unisa.ac.za

Prof Raphael Mpofo
Executive Dean
College of Economic and Management Sciences



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